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NEW ENGLAND SURGICAL SOCIETY

DR. ERNEST L. HUNT, Worcester, Mass.: *Mr. President and Fellow Members*—I function in this chiefly to ask the favor of your attention to one of my young colleagues, Dr. O'Meara. The work is all his. I can claim nothing except having some years ago been instrumental in organizing a service which has given him his opportunity.

Dr. O'Meara's work, I think, is highly original, and presents a method which I hope will commend itself to my colleagues of this Society, and I am sure will invite their criticisms. I take pleasure in presenting to you Dr. John W. O'Meara, of Worcester.

DR. JOHN W. O'MEARA: I have a short movie which I think can be shown while I am reading the paper. It shows the present range of activity of eight of the patients who have been treated by the method that I am about to describe. I won't refer to it. The title shows the number of months after operation when the movie was taken.

FRACTURES OF THE FEMORAL NECK TREATED BY BLIND NAILING*

BY JOHN W. O'MEARA, M.D.†

WHEN the American Orthopedic Association in 1928 appointed a commission to study the end-results of unimpacted intracapsular fractures of the neck of the femur it found, among patients treated almost entirely by closed methods, usually Whitman's, 30 per cent bony union in 201 patients over sixty years of age, roughly one out of three; and 52 per cent bony union in 365 patients under sixty years of age, roughly one out of two! A large majority of these injuries occur in persons over sixty.

This was a disinterested analysis of the work of others and probably represents average end-results obtained, though numerous surgeons, writing of their own work, have reported better. Whitman never reported his end-results. We are making a study, not yet complete, of our cases and believe results have been no better and probably not so good.

We think bony union should not be reported as an end-result without x-ray confirmation. Clinical examination and the patient's judgment are unreliable.

WHITMAN METHOD

We have long suspected that the reason one fractured hip treated by Whitman's method united and the next, apparently similar, did not, was that the first was reduced and the second was not. We think a valid objection to Whitman's method is that lateral x-ray confirmation of reduction cannot be had through plaster. We have proved often that what appeared to be perfect reduction in anteroposterior view was most imperfect in lateral. If plaster is to be used, accuracy of reduction should be checked by x-ray in two planes before it is applied. Where suitable x-ray equipment is available, there is no excuse for keeping a patient in spica for three months or more with fragments in such position that non-union is practically inevitable.

There are other well-known objectionable features; the three to six months' period of immobilization, hypostatic congestion, bed sores, stiff knees, atrophied muscles, long, slow convalescence. Several pulmonary infarcts we have seen were thought to be associated with frequent turning of patients in spicas.

SMITH-PETERSEN METHOD

Smith-Petersen[2] freshened interest in internal fixation by introducing in 1931 a three-flanged

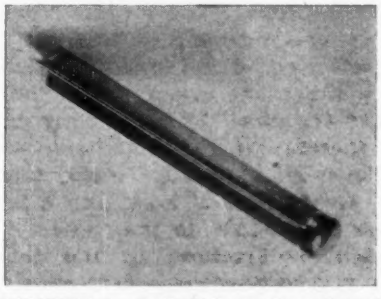


ILLUSTRATION 1. Smith-Petersen three-flanged nail.

nail which he had then been using for five years. He exposed the fracture through a wide incision. We tried this method in six cases and found it a formidable surgical procedure, requiring an hour and more on the operating table. We thought many of our patients too

*Read at the Annual Meeting of the New England Surgical Society at Burlington, Vermont, September 29, 1934.

†O'Meara, John W. — Senior Orthopedic Surgeon, Worcester City Hospital. For record and address of author see "This Week's Issue," page 76.

old and feeble for this type of surgery and sought to work out a simpler technique.

"BLIND NAILING"

Twelve hip fractures, treated by a method new to us, form the basis of this report. Eleven were transcervical, one a fracture at the base of the neck. The first case was done in December, 1933, six more in January, 1934, the remainder since. Seven nails have already been removed.

We make no specific acknowledgment of assistance to workers or writers elsewhere, except to Smith-Petersen for the nail. We had done seven cases before we first became aware that others, notably Wescott[3] in Virginia, Johansson[4, 5] in Sweden and King[6] in Australia were working along similar lines. They have recently published their methods. The object of each has been to place the nail accurately through a small external lateral incision, rather than by exposing the fracture as done by Smith-Petersen. Each has gone about this in a different way. Wescott makes determinations by x-ray study of the well hip. Johansson and King use a perforated nail threaded on a direction finding guide wire.

Essential points in our method are as follows:

(1) To accurately reduce the fracture, checking reduction by x-ray in two planes.
(2) To maintain apposition by internal fixation with Smith-Petersen's three-flanged nail, inserted through a small lateral incision.

PRELIMINARY X-RAY INVESTIGATION

When a patient with a fractured hip enters the hospital, the usual procedure is to turn him over to a technician who radiographs the hip as he finds it, with the thigh in helpless eversion. Not uncommonly the roentgenologist reports on this film only, that the fracture is impacted. We know he has no right to draw such a conclusion from a single film. There is often so much foreshortening of the neck and dropping posteriorly of the trochanter that it is difficult to determine exactly, even the level and extent of fracture. Primary x-ray examination should therefore include an anteroposterior view with the thigh internally rotated to make visible the entire femoral neck, and a lateral view to check the position in that plane.

If then, the fracture is found definitely impacted in good position in both views, certainly no manipulation is necessary, possibly no fixation, though we think it safest to proceed with fixation.

If the first film shows the fracture to be obviously loose, there is no need of taking a second until the patient is in the surgery under anesthesia.

REDUCTION OF FRACTURE

When it is determined that the fracture is either loose or as often happens that the lateral film shows marginal impaction in malposition, we proceed with manipulative reduction under anesthesia. We have used ether or spinal with satisfaction.

Manipulation consists of the following manoeuvres in the case of a loose fracture or one impacted in malposition. Impaction is broken up by lateral traction applied through a sheet encircling the thigh. A strong pull distally obtains length; the thigh is then flexed to right angle, lifted strongly forward and internally rotated maintaining flexion. It is then extended, maintaining internal rotation. Abduction is not stressed.

A tape is helpful because if shortening persists we know without x-ray that reduction is incomplete and manipulation is repeated. When measurement shows full length of the leg, the result is checked by anteroposterior and lateral x-rays.

While these films are being developed the patient is prepared and the surgeon scrubs, the leg meantime being held by an assistant. We tried fixing both extremities to foot pieces of the fracture table but found it unsatisfactory because the perineal post of the table interfered with lateral x-rays.

DIRECTION FINDING

The angle at which the nail is to be inserted and its length are determined from the anteroposterior film with a protractor and metal tape.

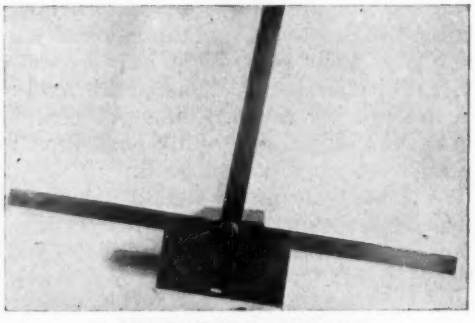


ILLUSTRATION 2. Protractor.

The angle is usually 130 to 135 degrees, and the length three and one-half to four and one-half inches.

When the angle is determined, the protractor is set at that angle and laid on drapes above the hip as a guide. The nail is to be inserted under it. We appreciate that this is not mathematically accurate, but it is simple and we believe our results show that it answers the purpose. It is more important to reduce the fracture accurately than to drive the nail through the dead centre of the head.

The forward angle of the neck is the remaining consideration. We have managed this quite simply also.

We made a number of lateral x-rays of normal hips in various degrees of rotation. We found that when the thigh was at the limit of internal rotation the femoral neck was flattened and parallel to the table on which the patient was lying, care being exercised to see that the pelvis was flat. Muscles posterior to the hip joint do not permit greater rotation than this.

Accordingly we hold the extremity in full internal rotation, confident that the forward angle is eliminated and the neck is flat, and insert the nail on the line parallel to the table.

OPERATION

A three to four inch lateral incision extends distally from the great trochanter and into the femur. The protractor indicates point at which the nail should be started, usually an inch below the junction of the trochanter and shaft. We use Smith-Petersen's starter to break through the cortex. This is withdrawn and the nail entered and driven in halfway. We then repeat the x-ray to check the direction in both views. If satisfactory, the nail is driven home and the fracture impacted. If the direction needs changing it is easier to withdraw the nail after insertion halfway than after it has been driven home. If halfway films show a satisfactory position in both views it is not necessary, except for record, to make further films after the nail has been driven home. We usually defer this. The wound is closed and the patient returned to bed in a Thomas splint with five pounds' skin traction.

POSTOPERATIVE CARE

The splint is kept on three to four weeks after which freedom of motion in bed is gradually allowed, then in a wheelchair, then on crutches without weight-bearing. We prefer to have the patient able to move the hip and knee joint quite freely before allowing him from bed. Weight-bearing without crutches was begun at varying times: by two patients at two months, four at three months, two at four months, one at seven months. One patient died, and two others are recent. We have used no walking calipers.

REMOVAL OF NAIL

This has been done after six months. It is loose then and probably of no further use. In one instance it had begun to slip out.

LATERAL X-RAYS

The method of making lateral x-rays deserves a word. We have tried the curved cassette but prefer another method which requires no special equipment.

The patient may be supine or lying on the affected side. The film is on the outer side of the affected hip with the upper end tipped into the loin as far as possible. The well leg is lifted forward. The tube is on the inner side of the thigh so placed that the central ray is at right angle to the femoral neck. Usually this means at the knee level. Slight adduction helps to bring the neck into view below the upper margin of the acetabulum. Most films made in this way have been sufficiently good to give us the information desired.

SELECTION OF CASES

All recent intracapsular fractures seen in this period have had this type of treatment, except six.

1. General paretic, aged fifty-one, pathological fracture. Death on tenth day.
2. Arteriosclerotic, alcoholic, aged seventy-nine. Death on twenty-fourth day.
3. Diabetic, senile dementia, aged seventy-six. Death on nineteenth day.
4. Senile dementia, violent, resistive, aged seventy-six. Transferred to the State Hospital on fifth day.
5. Senile dementia, aged seventy-eight to the State Hospital on nineteenth day.
6. Fragile lady who fractured her hip on her ninetieth birthday.

We do not consider the method suitable for old ununited fractures with absorption of the neck.

REVIEW OF TWELVE CASES

Average age sixty-eight; youngest fifty-five; oldest seventy-seven. No mortality from the injury or treatment. One died of bladder cancer.

No complications such as surgical shock, wound infection or pulmonary pathology. Two were admitted with bed sores, one after a month of home treatment, another after sixteen days in a spica.

The nail was misdirected in four early cases during a period when the x-ray equipment was disabled. In each instance it penetrated the head too far in front. One of these required withdrawal and reinsertion. This is an avoidable error of technique.

Nine patients are up and about, bearing weight freely but with one of these still using crutches part of the time. Four have returned to work, as librarian, janitor, housewife and truck driver after three, four, five and seven months respectively. Five were unemployed before the accident and continue to be. Three of these still need help with shoes, and stockings, but are otherwise independent. Seven, whose nails are out, have bony union by x-ray.

One patient, with bladder cancer, incontinent in spica for sixteen days, was nailed to dispense

ILLUSTRATION 3. Case 1. Loose intracapsular fracture.

ILLUSTRATION 4. Case 1. A. P. view. Fracture reduced and nailed.

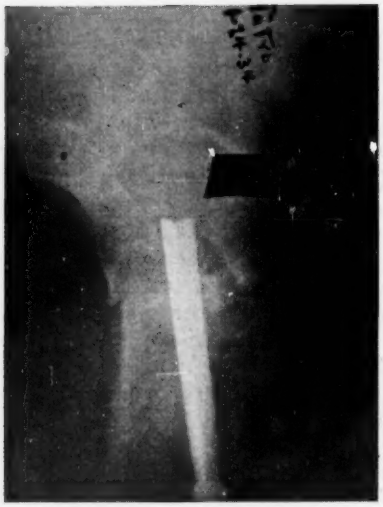
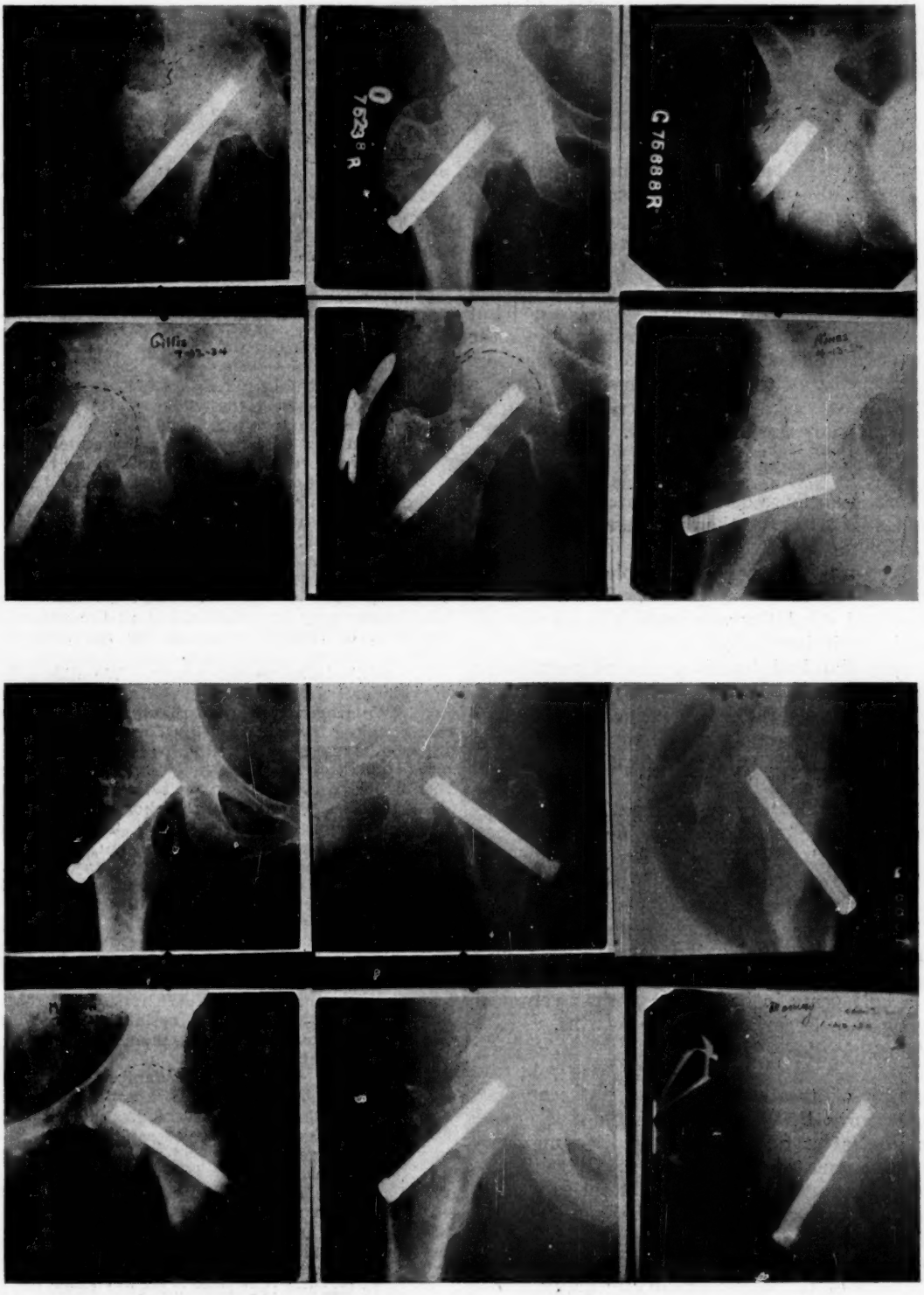


ILLUSTRATION 5. Case 1. Lateral view. Fracture reduced and nailed.

ILLUSTRATION 6. Case 1. A. P. view. Nail out. Bony union after six months.

ILLUSTRATION 7. Case 1. Lateral view. Nail out. Bony union after six months.



ILLUSTRATIONS 8 and 9. Group of twelve hip fractures, reduced and nailed.

with spica, facilitate nursing and permit radiation of the bladder. She died a month later, of cancer. The fracture was in excellent position by x-ray.

Two recent patients have not yet become active. One is doing well. The second, ill-chosen, we expect to be a failure. He is a male, aged seventy-two, with right hemiplegia of one year's duration, who fractured his right hip and was admitted to the hospital from the Home Farm, in poor condition. Recovery was not expected and a Thomas splint and skin traction were used for comfort only. His condition improved and nailing was done, believing that if he did not unite he would occupy a City Hospital bed indefinitely. Excellent position was obtained but check-up x-ray after two months showed the nail not holding and the fragments separating. We ascribed this to bone softening from a year's disuse following cerebral hemorrhage. Nailing should not have been attempted.

GENERAL COMMENT

There is no more danger of interference from interposed soft tissue than in other closed reductions.

After-care is more comfortable for the patient, and easier for the nurse. The treatment period and disability are materially shortened. The saving in hospital days is substantial. Five patients who had homes to go to required a month each in the hospital. Welfare and rooming-house cases needed longer hospital care.

The results to date indicate that objection to foreign material for internal fixation is invalid in respect to Smith-Petersen's three-flanged nail.

The family history of one patient indicates improvement of the present over the past handling of these cases. At seventy-four, her mother fractured her hip and died after eighteen months in bed. At forty-six her grandmother broke one hip which healed with shortening and a stiff knee. At seventy she broke the other and died at eighty-three after twelve and a half years in bed. Our patient returned to work as a librarian in three months.

CONCLUSIONS

Results of treatment of loose intracapsular hip fractures by Whitman's method of closed reduction, after thirty years' trial, do not warrant its unquestioned acceptance. If still preferred over operative methods, lateral as well as anteroposterior x-ray should be employed to check the reduction before encasing the patient in plaster.

Methods of internal fixation are being tried.

A simple method of internal fixation by blind nailing is described. It has been used in twelve cases. Results to date have been highly satisfactory to us when compared with those we obtained by other methods.

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DISCUSSION

DR. FREDERIC J. COTTON, Boston, Mass.: *Mr. President, Ladies and Gentlemen*—It seems to me that this is an admirable piece of work of very definite importance. I am going back a bit, if you don't mind, in relation to hip fractures. It is a year ago now, almost to a day, when I made a statement that I thought we were going to have to revamp the whole of our estimate of the treatment of hip fractures and methods in view of greater knowledge.

For thirty years men have been working, trying to do something with hip fractures. During that time, as I have watched it, there has been a very great improvement in methods, and a great deal of improvement in end-results. The old results, we all know, were very lamentable, but at the same time, the work of those last years has not been satisfactory.

We didn't have proper x-rays. We didn't know our mechanical pathology so accurately as we should have. We gradually learned that what had been previously taken for impacted hips, were not, as a rule, impacted hips at all, but hips entangled, simply with a spike of the neck in contact with the head, hips which very often weren't entangled but simply presented views of a foreshortening, giving a false impression of the whole hip. Therefore, gradually one man after another came to *reducing* the apparent impactions, though the majority were treated on the idea that a certain *position* would promote and secure a healing of the hip.

You cannot, simply by adducting a hip, insure that it will get a bony union.

A contribution which has not been properly evaluated was made by the late Dr. Peckham, of Providence, who being an admirable mechanic, realized that the important thing in maintaining reduction was internal rotation rather than abduction. He talked that in and out of season. His contribution has never been sufficiently recognized.

We came to recognize, however, one after another, that that was the important thing, and that abduction, while it had its place, wasn't so important. Only lately, since we have had proper lateral x-rays (and I don't care whether they are made with the curved cassette or any other way, as long as you get them) have we realized that there is a certain constancy to the lesion and the displacement in these intracapsular fractures with constant rotation out of contact with the broken surface of the head.

We have learned that they were not impacted and were in bad position and should be reduced. We have learned how to reduce them. I don't think there is much argument about that. Small details in the matter of reduction are not important. Personally, I add an adduction factor in the reduction. I think it is easier. It doesn't make much difference.

It is the same pattern put on record by Leadbetter a year ago, and the same thing that Dr. O'Meara has been doing here in all essentials.

A year ago I said that our problem, I thought, was going to be one of determining conditions so that after getting proper position, which we can now do, we could maintain contact and obtain repair.

The hips that have gone wrong in the past have been those that were either not properly reduced or that underwent a curious absorption which is so common. That absorption is not of the head but of the femoral neck, and I, for one, don't know why those cases absorb. The theory is that they absorb from irritation, but the same thing happens with absolute fixation as far as the spica will fix a hip, and those cases, if they absorb, will fall apart in bed, no matter how good the position is.

There has been enough good work done this year, some of it published, to let us know that to maintain abduction, spica fixation orientation is not always enough. I have seen several types fall apart from the same cause of absorption. The question is whether we can obviate that. I am inclined to think that nailing, which we have been hearing so much about, is as good a safeguard as we can get against the slipping apart due to absorption.

Whether we can constantly get satisfactory results, including cases we see, so many of them, in the older years, when nutrition is rather poor, and even with the nailing, whether we can constantly get bony union, I don't know.

Don't forget that there are a great many cases which get perfectly good clinical results with good close fibrous union, and many of the cases we have called bony union in the x-ray are not bony union; certainly some of them are not, but we do know in cases with absorption of the neck, if there is no displacement, we may get, at the worst, a union which is close-fibrous, and eventually often becomes bony, even with absorption of the neck.

Given proper fixation of the hip, fixation with the nail as we have been shown here, it seems to me probable that those cases which have a favorable condition of nutrition will get bony union anyway, and the others are going to be much more certain of getting an eventual bony union than by any other method we have seen so far.

I think there is a certain apology in what Dr. O'Meara has spoken of as "blind" nailing. Don't forget, gentlemen, there isn't any other kind of nailing in the hip.

DR. JOHN W. O'MEARA: I have very little to add. There are a few paragraphs of the paper that I didn't think I had time to read. One of them referred to the investigations of a commission appointed by the American Orthopaedic Association three or four or five years ago, which showed that in a group of more than two hundred intracapsular fractures from clinics all over the country, the percentage of bony union obtained by the Whitman method in patients over sixty years of age was only thirty.

With reference to the factor of internal rotation, we were familiar some years ago with Dr. Peckham's method of treatment. I think that was based on a much older method, first described by Maxwell, and later by Ruth. We used it in a number of cases invariably with non-union. The reason, we thought, was not that the fracture was not reduced, but that it was not fixed. The method combining traction in two directions did not immobilize the hip.

With reference to absorption, it has impressed me as curious that absorption of the neck is not seen in cases that are really impacted either by the injury or artificially, so far as I know. Absorption of the neck, I believe, runs along with malposition. It may appear to be good position in the anteroposterior film, but I think if we had lateral films of the same hip, we would find that the fracture was never reduced.

EXCERPTS FROM THE INFORMATION SERVICE OF THE ROCKEFELLER FOUNDATION

"While the Foundation has continued during the year its activity in furthering the advance of knowledge in the fields of public health, medical science, natural science, social science, and the humanities, its work in these fields has been vitally changed in scope through selection, for intensive work, of those subfields which contribute more directly to the general problem of human behavior, with the aim of control through understanding.

"In the fields of medical and natural science the major emphasis has been placed on the problem of mental health and on the development of those sciences whose advance is imperatively demanded to form the substantial scientific basis for the rapidly evolving modern science of man."

During 1933 The Rockefeller Foundation appropriated $9,890,806.31 for various philanthropic projects.

PUBLIC HEALTH

The Foundation expended for public health work during the year the sum of $3,286,063.01. It supported laboratories for yellow fever research in Lagos, Nigeria; Bahia, Brazil; and New York City. It completed, in coöperation with various governments of West Africa, an extensive survey which disclosed the areas in Africa where yellow fever occurs, assisted the governments of Brazil and Bolivia in an extensive program of yellow fever control; conducted experiments and studies on the vaccine and virus of yellow fever and on the mosquito vectors of this disease; aided three states in the United States and seventeen foreign governments in antimalaria work; carried out malaria studies and surveys in various parts of the world; engaged in studies of hookworm disease in Palestine, Egypt, Straits Settlements, and Puerto Rico; supported studies of Endamoeba histolytica, Rocky Mountain spotted fever, tuberculosis, sprue anemia, filariasis, schistosomiasis, and the diseases affecting the race of the Pacific; aided the government of India in conducting experiments on the disposal of refuse; sponsored studies of statistical epidemiology; contributed toward the development of state and local health services of fifteen European countries, the League of Nations, five Far Eastern countries, the government of the South Pacific Islands, six countries of the Caribbean region, wo countries of South America, and the governments of Mexico and Canada; gave assistance to the central health administrations of fourteen states in the United States and to the local health administrations of twenty-three states of the United States, four

(Continued on Page 68)

THE PRESENT STATUS OF INFECTION OF THE UPPER RESPIRATORY TRACT IN ITS RELATION TO FOCAL INFECTION*

BY WILLIAM V. MULLIN, M.D.†

TO find a focus of infection and to decide when its removal will result in the betterment of the patient's physical condition will ever be a difficult problem. During the last twenty years the importance of the removal of foci undoubtedly has been enthusiastically overemphasized. Someone has well said: "Unfortunately most men are incapable of grasping an idea unless they exaggerate it to the exclusion of all others." A typical example of a situation that confronts the ear, nose and throat specialist is something like this: "Doctor, I have some arthritis; I have already been to my dentist and had my teeth x-rayed. Now I want to see if you think my tonsils are responsible." This seems to be the understanding of the average finite mind regarding the cause and effect of focal infection.

A little reasoning should prevent many mistakes. If there is infection in one organ of the body, it is illogical to assume that it must be caused by, or follow, a focus of infection elsewhere. As a rule, a little thought is given to the logic that if the vitality of tissues, or that indefinable thing called resistance, is lowered, infection can lodge in and attack various tissues of the body at the same time. A distinction must be made between a person's susceptibility to infection and an actual focus of infection. And even when a focus is certainly present, we have no yardstick that measures the amount of absorption into the system, and hence judgment can be made only on the basis of how the body reacts to it.

A second cause for error is the lack of coöperation between the internist and the specialist, with the assumption of the latter that if infection is found, it must be the cause of the patient's symptoms, while the finding could readily be coincidental. I have told Morris Fishbein that I am borrowing a very expressive saying from him, namely, "The only exercise some people get is jumping at conclusions."

I feel that the proper evaluation of focal infection in various systemic diseases will never be made by analyzing numbers of cases, nor by statistics, but rather by a careful study of the individual case. There is but one correct method of procedure in each individual instance; to get a detailed history followed by a thorough physical examination and then to weigh carefully the importance and significance of all foci. This is rather bound to keep one within the confines of the straight and narrow path.

In evaluating the importance of various foci, I would place them as follows: tonsils, prostate, cervix, gastro-intestinal tract, and sinuses. It must be borne in mind that often there are multiple foci. The teeth are hardly to be classed with the tonsils and sinuses. Because of their anatomic structure, they are potentially very true foci; the infection is well locked in, almost compelling absorption, while the tonsils and the sinuses may be only portals of entry for infection and can fully recover, while the infection in the joint or elsewhere will go on. It is conceivable that removal of the tonsils might prevent a second invasion of infection, but yet have no effect on the secondary infection already established.

Confined infection is dangerous, for it exerts an influence on metabolic processes, and hence should be eradicated almost irrespective of symptoms, but especially if constitutional symptoms are present. I do object to the so-called microscopic search for some slight remote focus, such as a mild infection in the posterior group of sinuses, with operation, before a general examination is made, when the original infection would probably have returned to normal without surgical treatment.

Before anything should be said relative to foci and arthritis, it must be emphasized that the individual case of arthritis must be diagnosed and classified as to type. Some kinds are in no way related etiologically to infection. Arthritis is not common among the natives of tropical countries. Patients who have it usually improve when they go to warm climates irrespective of foci of infection. There must be a fertile soil for the development of arthritis and when this is present, a focus of infection, the shock produced by an automobile accident, or by a sudden decline in the stock market, can with equal force be the trigger mechanism that spreads the seed. We have all seen patients in whom arthritis developed following an acute pharyngeal infection, when a perfectly clean and adequate tonsillectomy had been performed some time previously. I have even seen a patient die of a blood stream infection following the condition just described.

Infectious arthritis, if it is not checked, is progressive and will result in joint destruction and ankylosis and hence no chance should be taken in allowing foci to remain. As an exam-

*Presented at the Twenty-Fourth Annual Meeting of the American College of Surgeons, Boston, October 17, 1934.

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ple, a man and his wife both contracted acute sore throats while on a vacation. The husband had had his tonsils removed, the wife had not; he developed infectious arthritis in his left wrist and she in her right knee. Both went to a hospital, were thoroughly examined, and received excellent care. The wife has a stiff knee which will require operation. When the acute process in the knee subsided I removed her tonsils, for in view of the circumstances it was felt that the tonsils were potentially dangerous.

Many times in the treatment of arthritic patents, it is much more necessary to build up their immunity by a proper regimen than to break it down further by subjecting them to operations of doubtful value. Operations should not be performed on the patient with hopeless arthritis, nor at a time when the resistance is low. After proper study and the institution of measures to improve the patient's general condition, and when there are definite indications for operation, the removal of foci does produce improvement in many cases of chronic infectious arthritis. Tonsillectomy often yields good results while operations on infected sinuses have been disappointing in my experience.

DeWayne Richey of Pittsburgh told me recently that he had succeeded in finding Aschoff bodies in the tonsils. This would strengthen the belief that if any suspicion is thrown on the tonsils, they should be removed from children with rheumatic fever after the acute attack has subsided.

Chorea in children may have many underlying causative factors. Infection is only one, but if the child who has it gives a history of repeated infections, or shows definite tonsillar infection, this focus should be removed.

The patient with valvular heart disease, such as mitral stenosis, has a condition that is very intolerant to infection and if the tonsils are infected, they should be removed in a period between exacerbations. Hypertension in my opinion is not associated with infection, and the removal of foci with any hope of reducing the arterial pressure, is fruitless.

Nephrosis and nephritis are conditions about which there is controversy concerning the influence of infection in their pathogenesis. In my experience, the results from the removal of foci in nephrosis have been discouraging, so far as improving the kidney condition is concerned. At the same time, I feel that any child with nephrosis who has infected tonsils should be given the benefit of a tonsillectomy perhaps more for its prophylactic effect, since these patients tolerate infection poorly. However, the operation should only be performed when the patient's condition is improved, and not during or immediately after an acute attack. We certainly have no definite proof that glomerular nephritis is of infectious origin, but no patient with this disease should be carrying around an extra burden of infection. Here again, operations should not be performed during the acute stage of the disease.

Infected sinuses in the child with nephrosis or nephritis should be treated adequately and thoroughly before operation is resorted to, but the same dictum applies to the sinuses as to the tonsils. They should be cleared of infection and an effort should be made to keep the child free from upper respiratory infection.

Some of the most satisfactory and probably the most brilliant results I have seen following the removal of foci of infection have been for the relief of vertigo in cases of toxic labyrinthitis. At the same time, I feel that I have seen practically no improvement in the removal of foci in cases of eighth nerve deafness.

I have reviewed the histories of a group of cases of congenital deafness in children ranging from nineteen months to fourteen years of age. Of these, 25 per cent had had their tonsils and adenoids removed, and that seemed to be all that had been done for them. In other words, practically none of the mothers had been instructed as to the value and necessity for education of the child. In another group of advanced deafness in patients ranging from two to eighteen years of age, over 50 per cent had had their tonsils and adenoids removed merely on the basis that it might help their deafness. But the question of lip reading, or hearing aids, had not been explained to the mothers or to the patients.

Another tragic evidence of overzealous enthusiasm for focal removal is presented by the patient who has had questionably infected or sometimes healthy teeth removed because of the location of the pain or extensive operations on the sinuses, and always a tonsillectomy, all having been done because the true diagnosis of fifth nerve neuralgia, a condition not influenced by focal infection, was not made.

Iritis and inflammations along the uveal tract are usually associated with systemic absorption and in such cases a careful check should be made for foci, which should be removed after the examination and the diagnosis have been made by the ophthalmologist. These eye conditions are more often associated with tonsillar infection than infection in the sinuses.

The mention of papilledema and neuritis of the optic nerve always brings forth discussion from those who do and those who do not believe that these conditions are caused by infection in the paranasal sinuses. I am with those who do not, and I think that proper examination and study practically always will reveal that the cause is elsewhere.

I can only reiterate the caution and advice not to operate at random on a patient with focal infection, and let the failure to obtain results

tell you that his case needed more study. First do everything else that might help and then, after time and careful study, resort to surgical removal only if there are definite indications. I wish also to emphasize the fact that care must be taken in training specialists, so that they become doctors and diagnosticians first and surgeons afterwards; that they do not hold out a tonsil and adenoid operation as a panacea for all ills and perform this operation indiscriminately without due and weighty consideration.

THE DIAGNOSIS OF CHRONIC INFECTION OF THE TONSILS IN RELATION TO INDICATIONS FOR OPERATION IN CASES OF CHRONIC FOCAL INFECTION*

BY GEORGE MORRISON COATES, M.D.†

FOR many years a paper dealing with the tonsils would have been taboo on any such a program as this, but recently interest in this subject has revived, and my attention was called to it by the symposium, or debate, arranged by the Fellowship of Medicine and conducted in London by such distinguished laryngologists as Herbert Tilley, J. A. Glover, Dan McKenzie, and others. In 1931, J. M. LeMeé, of Paris, presented his very thorough study of this question. It was taken up in great detail by Lee W. Dean at the 1934 meeting of the American Medical Association; by Kaiser, Nissen and Mosher at the recent American Academy meeting in Chicago; and last winter by the writer and William Gordon at a symposium before the Philadelphia County Medical Society. It is many years since John Nolan Mackenzie, of Baltimore, startled the profession with his "Massacre of the Tonsils," while the London thesis was "that operations for removal of tonsils are too often performed without adequate cause". To settle these questions one must be informed as to the physiology and function of the tonsils, the relationship of tonsillar sepsis to organic disease elsewhere, and as to what constitutes a proper diagnosis of tonsillar infection. There is not, at present, time for discussion of physiology and function. That the tonsils often act as portals of entry for infection manifested in other parts of the body is rather generally accepted, as well as that chronic disease of the tonsils may be a primary cause of infectious processes of focal origin elsewhere in the body. What is often overlooked is that the infected tonsil may be only *one* of several such agencies, although perhaps the primary one, and that chronic diseases, such as arthritis, are often due to factors other than infection anywhere, as proved by Pemberton, who showed that fifty per cent of a group of arthritics recovered, or improved, actually in the presence of such a focus.

Even if the disease be of focal origin, and the tonsils evidently grossly infected, removal may fail to give relief, if other possible foci are overlooked. Such foci may well be in the teeth, sinuses, possibly the ears, the gallbladder, gastro-intestinal tract, prostate, etc. Furthermore, it is true that many individuals carry septic tonsils for many years without showing evidence of disease of focal infection origin. Here we must assume that the resistive powers of the individual are great enough to counteract the toxins fed into the system from the tonsil infection. What may happen, at any time, is that a sudden increase in the virulence of the infection, or a sudden lowering of the resistance of the individual, due to extraneous cause, may upset the previously maintained balance with the result that the symptoms of focal infection become manifest.

From a purely academic standpoint the diagnosis of chronic tonsillar sepsis is fairly easy, but when considered in relation to indications for operation it is a very different, and often difficult, matter. Strictly speaking, still from the academic viewpoint, any tonsil that shows infectious matter in the crypts, or that will show a growth of pathogenic organisms when the crypts are cultured, may be considered infected. To accept this as a clinical standard for diagnosis would condemn all adult tonsils, and probably most of the tonsils of adolescence, if not of childhood also, for there are few tonsils that will not respond to one or both of these tests, especially if we include the foul-smelling cheesy masses in the category of infectious material.

The evidence, clinical and otherwise, for making a diagnosis of chronic tonsillitis, and in this I am in accord with all the authorities mentioned above, although some observers lay more or less stress on different individual points, may be briefly put down as follows: The history of local tonsillar inflammation, acute or chronic; Hajek's dictum—repeated attacks of acute tonsillitis; one or more attacks of quinsy; repeated coryzas beginning with sore-throat; more or less constant soreness and discomfort in the tonsillar region; cervical adenitis, dental sepsis having been eliminated; enlargement or tenderness of the tonsil node at the angle of the jaw; gross hypertrophy of the tonsils, not merely a small extension beyond the anterior

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pillar. On the other hand, the small, buried or submerged tonsil is often the more dangerous of the two.

The appearance of the anterior pillar, particularly in its upper portion, is of importance. In chronic infection, especially if a streptococcus is present as the chief infecting organism, the pillar is often inflamed in appearance, red, deep red, or purplish in color. Liquid pus can be seen coming from one or more of the crypts. If not seen, it may be expressed by drawing the anterior pillar forward and outward, and then pushing behind the tonsil. The pus is more often found in the crypt of the upper pole, but it may not be apparent at all at the first examination. Aspiration may also be useful in this respect. A tonsil that is fibrous and firmly attached in its fossa suggests a previous quinsy, the scar of which may be observed, many attacks of acute infection, or a long process of chronic infection, maybe mild in character, by which fibrous tissue has been laid down. Simple tonsillar hypertrophy with enlargement of the cryptal orifices often eventually shows small ulcerocongestive lesions at their borders. A bacteriological examination, if a streptococcus is recoverable, is accepted by some as strong confirmation of other signs and symptoms.

Are the caseous masses so often found in adult tonsils signs of chronic infection? This point is at least open to question. Twenty per cent of the respondents of the LeMeé questionnaire answered in the affirmative, and it can certainly be demonstrated that these accumulations are frequently accompanied by liquid pus. Several of the participants in the London debate agree with this proposition, although there are many who do not. It seems to me that this condition, if constant, must be considered as chronic tonsillar inflammation, or infection, and that the tonsil so affected is open to suspicion, although this should not constitute, in itself, an indication for tonsillectomy, except possibly for a social reason, such as bad breath.

The presence of small purulent collections sealed in the crypts by inflammatory adhesions of their margins, but often plainly to be seen, must be considered in arriving at a diagnosis, and French, with his transilluminator, found these "abscesses" deep in the tonsil substance, where it is common enough to find them after tonsil removal.

We can, it is conceded, with more or less difficulty, often make a diagnosis of tonsillar sepsis. Is it equally true, then, that we can say with any assurance that there is no infection present? I think not, except by removal and subjection of the tonsil to bacteriological and pathological investigation. How often have we removed a fairly innocuous appearing tonsil, only to see it gush pus from every crypt when squeezed by the snare or guillotine? To certify that any given tonsil is definitely not a focus is to court diagnostic disaster.

Having made a clinical diagnosis of infection in the tonsil are we now prepared to say that this tonsil must be removed? Not yet, I think, if we wish to be considered conservative. From the viewpoint of systemic infection, it must now be decided whether the tonsillar infection is probably actually causing damage or is likely to cause it in the future. From the standpoint of prophylaxis there is great divergence of opinion. The studies of Kaiser, conducted over a ten-year period among the school children of Rochester, N. Y., seem to show statistically that prophylactic tonsillectomy did not make for great immunity to recurrent infections of the respiratory tract, to acute contagious disease or to rheumatism. The studies of Horace Williams in the Philadelphia Hospital for Contagious Diseases, over a similar period, showed rather conclusively that the children in this hospital who had middle-ear suppuration and its complications, were almost all not tonsillectomized. Dan McKenzie says, "I can remember the generation of children before adenoids were known. I remember the discharging ears and the deafness; I remember the dirty noses and the thick, excoriated upper lips; I remember the 'scrofulous' glands in the neck; I remember the vacant stupid faces; I remember the dacryocystitis, weeping pus; my companions I have seen dying in middle life from heart disease contracted in childhood after tonsillitis. Then I turn and look at the young men and maidens of to-day, clean of health and stature, and I see the transformation of a race through the influence of a simple operation." Furthermore, McKenzie doubts the value of statistics used to disprove this point, and asks whether the figures are reliable; whether in fact, in those cases where focal disease has developed after tonsillectomy we have any statistics to prove that the tonsils were completely removed, or whether the adenoids were not alone removed in some cases, and whether a recurrence of this lymphoid tissue was excluded by competent examination.

While Herbert Tilley agrees with some of the foregoing statements and that a definite septic tonsil should be removed, he deprecates the wholesale removal of tonsils as a prophylactic measure and urges careful study of the whole physical condition of the patient. His method of diagnosis of a septic tonsil is substantially as outlined above.

When it comes to a diagnosis of tonsillar sepsis in relation to focal infection, the case requires more coöperative study. If it is a question of middle-ear or sinus disease the otolaryngologist may well decide upon the proper procedure. When, however, the case is one of arthritis, let us say, other problems arise and the case should have the most careful study by all physicians

associated with it. It will not do for the laryngologist who finds the infected tonsils to order immediate removal on the chance that they are the sole, or even the main cause, of the arthritis. Other foci must be sought, or causes other than infection, and the diagnosis of tonsil infection as the etiological factor in the case must be arrived at by general consultations and consideration of all the evidence. Pemberton has brought this out very clearly, and he never allows a tonsillectomy, or any other surgical removal of a focus of infection, not only until the case has been thoroughly studied, but until it has been put in such physical condition that the operation will, at least, do no harm.

Kaiser well says that the reaction against indiscriminate tonsillectomy followed the less striking beneficial results when the tonsils were removed for vague indications, while statistical and clinical study justifies enthusiasm for this procedure in properly selected children. Nissen insists that after infection in the tonsils is *determined*, the study must be extended to all other parts of the body in order to demonstrate systemic disorder, but even if this is discovered, the relationship between the two must be proved. Close clinical observation by the physician and frequent reports of subjective symptoms by the patient over a considerable period of time are essential to determine the association between the local and systemic infection.

To recapitulate, it is usually possible for the painstaking laryngologist to determine the presence, or probable absence, of significant chronic sepsis of the tonsil. Where the tonsil is very definitely diseased, its removal for prophylactic reasons will often give striking results. When the tonsil is removed on mere suspicion, or after hasty and inadequate examination, the guess may as well be wrong as right. When the septic tonsil is discovered in association with some systemic disorder, the diagnosis of tonsillar infection as the cause of this disorder can only be satisfactorily arrived at after meticulous study and consultation on the part of the laryngologist with the attending pediatrician, internist or surgeon.

JAMES JACKSON (1815) AND DIGITALIS

An Historical Note

BY HENRY A. CHRISTIAN, M.D.*

AS we are apt to think of our present usage of digitalis, particularly in the form of pills or capsules of powdered leaves, as thoroughly modern, it is well to recall that in powder form digitalis was being recommended to the students of the Harvard Medical School by James Jackson, second professor of the Theory and Practice of Physic, one hundred and nineteen years ago, as shown by the following extract from notes on his lectures taken by a medical student in 1815:

> ". . . for this purpose digitalis is commonly employed. It is given in infusion ℥i to ℥viii water in a dose of ℥ss, or in powder from gr. ss to gr. iss at a dose and we should go on increasing the dose until some effects are produced. Of these effects some are to be desired and others avoided. The former are a diminution of the pulse and an increase of the urine. . . . The power of this medicine seems to accumulate and to produce suddenly great effects when it has been regularly taken for some time."

These words would be fitting for a lecture of to-day. It is a remarkable fact that the utilization of digitalis as recommended by Withering (1785) and as being taught in Boston by James Jackson in 1815 practically was forgotten until revived by James Mackenzie in the early part of the twentieth century. As Pratt (*J. A. M. A.*, 71: 618, 1918) says, "Withering's splendid work was practically unnoticed by teachers and students of cardiac disease, in England and America at least, for more than a century. . . . Hope, Stokes, Latham and Walshe and our own Austin Flint, masters of medicine though they were, paid no attention to Withering's teachings and never discovered for themselves the great value of digitalis in cardiac failure when properly administered."

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THE DIAGNOSIS IN SPINAL FLUID CONTAMINATED BY BLOOD: THE "BLOODY TAP"*

BY PHILIP SOLOMON, M.D.†

IN recent years, the lumbar puncture has passed out of the stage of a highly specialized procedure to be attempted only by a neurologist or neurosurgeon, to become part of the diagnostic armamentarium of the internist, pediatrician, and general practitioner. There are still localities where lumbar puncture is looked upon as little short of a major operation, but unquestionably more and more lumbar punctures are being done each year in the home or office with success and safety. It is because of the increasing realization of the importance of lumbar puncture in diagnosis that the problem of the "bloody tap" has become an urgent one. It has been estimated that about one in every ten lumbar punctures results in a "bloody tap". On the neurological wards of the Boston City Hospital, the percentage is lower, on the medical wards it is higher. In general practice where many of the patients are struggling children, the incidence of "bloody taps" is probably even higher.

It is common practice to discard the fluid obtained at a "bloody tap" as valueless, as is recommended by several textbooks[1, 2]. The usual teaching is to wait three days after the "bloody tap" and repeat the puncture. But where the puncture has been done because of the question of poliomyelitis, encephalitis, or meningitis, the examination of the spinal fluid is a crucial point in diagnosis, and a three day delay becomes a serious matter. It must also be remembered that there are certain conditions in which the spinal fluid contains blood, and it is equally important to establish a diagnosis of one of these conditions as it is to exclude the diagnosis of meningitis, poliomyelitis, etc.

We have developed a method for the analysis of spinal fluid containing blood, which has enabled us in almost every case to obtain the diagnostic information desired in spite of the contamination with blood. The experimental data upon which this work is based have been reported elsewhere[3]. We are concerned here with the practical application of the results, which have been used effectively at the Boston City Hospital for the past three years.

When the spinal fluid removed at a lumbar puncture is blood-tinged, the operator's first concern should be to determine whether the blood was present in the fluid before the puncture or whether it was introduced into the fluid by the operator in performing the puncture. The spinal fluid may have contained blood as a result of severe head injury, cerebral hemorrhage, simple subarachnoid hemorrhage or certain other diseases. A small amount of fluid (two or three cubic centimeters) should be collected in each of three or more tubes. If there is an obvious decrease or variation in the amount of blood in the successive tubes, one is almost certainly dealing with a "bloody tap". If the fluid is so grossly bloody that it flows only with difficulty and soon clots, it is best to remove the needle and repeat the puncture a space higher with a fresh needle. (It is wise always to include two needles in the lumbar puncture set.) If the fluid is only moderately bloody it should be collected as usual. The last specimen, which is likely to be much less bloody than the others, should be *mixed thoroughly* and a small portion of it poured off to be used for cell counts. The remainder should then be centrifuged as soon as possible in order to avoid errors due to hemolysis. If the supernatant fluid is colorless compared with water, and the sediment shows some clot formation on standing, the diagnosis of "bloody tap" is confirmed. In previous subarachnoid hemorrhage the supernatant fluid begins to be xanthochromic as early as three to four hours after the bleeding, and clotting does not occur. Table 1 illustrates these criteria.

	"Bloody Tap"	Previous Subarachnoid Bleeding
Homogeneous admixture of blood	0	+
Formation of clot	+	0
Xanthochromia in supernatant fluid	0	+

TABLE 1. Criteria for distinguishing the "bloody tap".

The next step in the procedure depends on the purpose for which the lumbar puncture was done. In spite of contamination with blood, information of value can be obtained regarding the cell count, the protein, sugar, and chloride values, and the colloidal gold and Wassermann reactions. In every case a careful red cell and white cell count should be made

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on the fluid set aside for this purpose. Both counts can be made together by staining with Unna's polychrome methylene blue, which stains the white cells blue and the red cells yellow. The stain is drawn up to the 05 mark in a white blood pipet, and the fluid to the 11 mark. The mixture is shaken for one minute and counted. The result is multiplied by 20/19 to correct for dilution.

In cases of suspected meningitis, poliomyelitis, encephalitis, or whenever the exact cell count in the spinal fluid is important, a white count should be made at once on the patient's peripheral blood. If there is reason to expect the red count to be abnormal, a red count should be made also. The number of white cells which entered the spinal fluid with the contaminating blood can then be calculated by direct proportion, and the number of white cells originally in the spinal fluid therefore obtained. If RBC_B and WBC_B represent the cell counts in the blood, RBC_F and WBC_F the cell counts in the spinal fluid, and W the white cells originally in the fluid,

$$(1)\quad W = WBC_F - \frac{WBC_B}{RBC_B} \times RBC_F$$

smears should be made of the sediment from the centrifuged specimen and stained with Wright's stain for a differential count and with Gram's stain for organisms. A specimen of spinal fluid should be cultured. The sugar and chloride determinations should be made immediately on the supernatant fluid, since these are little affected by contaminating blood and are of considerable diagnostic value in questions of infection of the central nervous system.

Example 1. A physician is called to see a child with a history of headache, vomiting, and sore throat. He finds the patient irritable and restless, the temperature 101°, the throat red, and the neck somewhat resistant to flexion. There have been cases of infantile paralysis in town and the parents are extremely anxious. The physician decides that a lumbar puncture must be done. Unfortunately the child squirms as the needle pricks the dura and the needle lurches through to encounter the venous plexus on the other side of the canal wall, so that a "bloody tap" results. The physician collects the fluid nevertheless, and takes a white count on the peripheral blood before returning to his office. Careful counts on the bloody spinal fluid show 25,000 red cells, and 260 white cells. The blood white count was 20,000.

$$W = 260 - \frac{20{,}000}{5{,}000{,}000} \times 25{,}000 = 260 - 100 = 160$$

In view of the pleocytosis of the spinal fluid, the physician makes the tentative diagnosis of poliomyelitis.

Example 2. Following a mastoidectomy, a patient complains of severe headache, and nausea. The fever continues high. The neck seems slightly stiff, possibly because of the tenderness about the operative wound. A lumbar puncture is done and a "bloody tap" obtained with a pressure of 300 mm. of water. Careful counts show that the spinal fluid contains 20,000 reds and 1,200 whites. The blood count is 18,000.

$$W = 1{,}200 - \frac{18{,}000}{5{,}000{,}000} \times 20{,}000 = 1{,}200 - 72 = 1{,}128$$

A diagnosis of meningitis is made, but thus far it cannot be determined whether it is a bacterial or aseptic meningitis. A smear of the spinal fluid sediment stained with Wright's stain gives a differential count among the white cells of 93 per cent lymphocytes, 6 per cent polymorphs, and 1 per cent large mononuclears. Smears stained with Gram's stain show no organisms. Cultures are made of the bloody spinal fluid. A sugar determination shows 70 mgm. per 100 cc. A chloride determination shows 725 mgm. per 100 cc. Bacterial meningitis is therefore ruled out, and a negative culture report later corroborates this opinion. On the basis of the diagnosis of aseptic meningitis, the operative wound is reopened and explored, and a small pocket of necrotic bone and pus is found close up against the dura.

Example 3. A young adult is seen with a recent history of increasing severe headache and delirium. On examination the temperature is found to be 102°, the neck is rigid, the eyegrounds show signs of early choked discs, the tendon reflexes are all hyperactive, the Babinskis and Kernigs are positive. A lumbar puncture is done and bloody fluid obtained under a pressure of 350 mm. of water. Specimens of the fluid in different test tubes are seen to be equally bloody. The blood does not clot on standing, and on centrifuging the supernatant fluid is definitely xanthochromic. A diagnosis of simple subarachnoid hemorrhage is made and a relatively good prognosis given.

When the presence of tumor is suspected, the cell count should be corrected as before, but here the exact protein value is of chief importance. The protein determination is made on the supernatant fluid, and the value is corrected according to the number of red cells contaminating the specimen. The original protein (P) may be calculated with the greatest accuracy if the patient's red blood count (RBC_B), serum protein (P_B) and hematocrit value of the blood (H) are known. If P_F represents the protein content of the supernatant fluid as determined, and RBC_F the red count in the fluid.

$$(2)\quad P = P_F - \frac{RBC_F}{RBC_B} \times P_B \times (1 - H)$$

For most purposes one can assume an average serum protein of 7 grams per cent, a hematocrit of 43 per cent, and a red count of 5,100,000. Equation (2) then becomes:

$$(3)\quad P = P_F - 0.0008\ RBC_F$$

In other words, unless the patient is very anemic, the original protein can be estimated with sufficient accuracy by subtracting from the determined protein 4 mg. per hundred cc. for each 5,000 red cells of contaminating blood. It is important to remember that this method is not accurate if hemolysis has occurred in the supernatant spinal fluid.

When the diagnosis of syphilis is in question, the cell count and protein value should be ascertained and corrected. Part of the supernatant fluid should be used for a colloidal gold reaction, and part for a Wassermann test. While slight changes may occur in the colloidal gold reaction owing to contaminating blood, these usually can be distinguished from the changes characteristic of syphilis of the central nervous system, inasmuch as even 25,000 red cells per cu. mm. of contaminating blood will produce only a few 2's in a normal gold curve. If the Wassermann test of the blood is positive, a positive reaction in bloody spinal fluid is not of value, but a negative reaction is significant.

When the lumbar puncture is done for reasons other than those discussed, similar procedures should be carried out to correct for contamination.

Summary. The importance is emphasized of utilizing for diagnostic purposes spinal fluid obtained in a "bloody tap", and a method presented by means of which a corrected cell count, protein, sugar, and chloride determination, and colloidal gold reaction can be obtained. When it is not practicable to carry out the more exact procedures necessitating studies of the patient's blood, the following gives a good approximation:

(1) The original white count can be obtained by subtracting one white cell for every 500 red cells in the bloody fluid.

(2) The original protein content can be obtained by subtracting 4 mg. per hundred cc. for every 5,000 red cells present, or, roughly, 1 mg. per thousand red cells.

(3) The sugar and chloride values are not appreciably affected by contaminating blood.

(4) The colloidal gold reaction is not affected unless the red cells number over 5,000. Even 25,000 will produce only a few 2's in the curve.

(5) A negative Wassermann reaction in a bloody spinal fluid is reliable, but a positive Wassermann reaction in a bloody spinal fluid is significant only when the blood Wassermann reaction is negative.

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THE INJECTION TREATMENT OF INTERNAL HEMORRHOIDS*

BY FRANKLIN G. BALCH, JR., M.D.†

HEMORRHOIDS have existed to plague mankind since time immemorial, but owing to an exaggerated fear of the knife or cautery, mankind has continued to suffer from them. Some form of injection treatment has been used by itinerant so-called "doctors" for fifty years or more. These men would treat the patient and then move on to the next town before the slough or abscess developed. Because of improperly selected cases, improper solution, and improper methods of injection, the treatment fell into disrepute and was used only by the "quacks".

SELECTION OF CASES: It is imperative that the proper type only be injected. Internal hemorrhoids only should be thus treated. External hemorrhoids should never be injected. Any case which continues to bleed after one injection should always be proctoscoped. Miles[9] divides all hemorrhoids into three stages:

(1) Primary. The hemorrhoid is "small and covered with healthy, unaltered mucosa". It "bleeds readily, often profusely". It does not protrude. Hemorrhage is the only symptom.

(2) Intermediate. The "bleeding is less frequent and less copious, several actions of the bowels often taking place without any bleeding at all. Protrusion occurs with every act of defecation, is spontaneously reducible, and does not tend to recur except during defecation".

(3) Final. "The bleeding is nil. The protrusion is continuous unless manually reduced. There is a marked tendency to recurrence during slight exertion." Gabriel[3] believes that only

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the first two types should be injected. Yeomans[17] states that the "uncomplicated cases of internal hemorrhoids (65 per cent of cases) only should be injected." Perrin[12] classifies hemorrhoids much as does Miles, believing that only the first two classes should be treated by injection. McEvedy[8] states that, in the absence of any complicating pathology, about eighty per cent of hemorrhoids are amenable to treatment by injection. Fansler[2] feels that the only type to be injected "is the internal hemorrhoid which when injected will remain above the internal sphincter" and that no other type should ever be injected. Smith[14] advocates the injection treatment in uncomplicated cases, where protrusion is not excessive or where the patient is a poor surgical risk.

CONTRAINDICATIONS: Most surgeons with experience in this form of treatment believe that cases complicated by fissure, fistula, external hemorrhoids or internal hemorrhoids associated with ulceration, strangulation, or gangrene should not be treated until these conditions have been removed. Any condition which causes congestion in the hemorrhoidal plexus, such as a pelvic tumor, will make treatment inadvisable.

SOLUTION: Phenol in oil has been used for a great many years, especially by the English. Strengths from five per cent to twenty-five per cent have been employed, but the majority of surgeons now advocate the weaker solutions. Gabriel[3] advocates the use of five per cent phenol in almond oil while Perrin[12] prefers a twenty per cent mixture consisting of one part phenol, two parts glycerine, and two parts of distilled water. Montague[10] uses ten per cent cresylic acid in equal parts of water and glycerine as he believes this is less toxic than phenol. Fansler[2] finds five per cent phenol in olive or Wesson's oil to be the most satisfactory. Terrell[16] since 1913 has used five per cent quinine and urea hydrochloride with excellent results. He states that about one per cent of patients have an idiosyncrasy to this drug. In the rectal clinic at the Massachusetts General Hospital with rare exceptions this solution only has been used for the past five years. Here it is prepared and used in bulk. In private practice it is best used in sterile ampules containing 2 cc. each. Five per cent phenol in oil was used in about fifty cases but, owing largely to frequent sloughs, its use was discontinued.

INSTRUMENTS: Some type of fenestrated speculum is essential. This should either contain illumination by the incorporation of an electric bulb in the speculum or sufficient illumination should be obtainable from an extraneous source. Some men prefer the use of a head mirror, others of a light thrown directly into the speculum. At the Massachusetts General Hospital an ordinary student's reading lamp on a stand is used and has proved to be very satisfactory. Some form of syringe is necessary. Montague[10] prefers a Cook syringe with the solution in carpules. Most men use an ordinary 2 or 5 cc. Luer syringe with a fine gauge needle one and a half to two inches in length. At the Massachusetts General Hospital a small fenestrated Otis anoscope, a 5 cc. Vim syringe, and a one and a half inch 22 gauge needle are preferred.

TECHNIQUE: Before any instrument is passed, a digital examination should be made to determine the presence of any other pathology such as carcinoma, fissure, fistula, etc. The patient should be placed on his side with the knees well drawn up so that the anus will be pointing toward the operator. The patient can be of great assistance by holding up the upper cheek of the buttock, thus giving a good exposure of the anus. For a lubricant, boric acid ointment is preferable to some water soluble substance. Following digital examination, the anoscope is gently introduced. The anus is best divided into quadrants each of which is inspected separately. It is wise to inspect all quadrants before any treatment is given as otherwise bleeding may interfere with vision. Before injection, the anus should be thoroughly cleaned wth a swab soaked in soap solution. Iodine, mercurochrome, or other antiseptic is not necessary in most cases.

Insertion of the needle: It is very important that the needle be inserted above the pectinate line into the true hemorrhoidal tissue as, if the injection be made outside of this, there will be a large amount of pain. If done correctly, the injection should be practically painless. The needle should be inserted into the center of the hemorrhoid and enough of the solution injected to distend the mass without making the surface white and shiny. About 1 to 1.5 cc. of quinine and urea hydrochloride is usually sufficient. It is well to leave the needle in situ for about one minute after injection as this tends to lessen the bleeding. This bleeding practically always occurs to a small extent but does not continue. In the rectal clinic it has been a practice to massage the site of injection with the finger following injection to distribute the solution more evenly, thus preventing cord-like fibrosis.

SYMPTOMS FOLLOWING INJECTION: Usually the patient complains of no symptoms. Occasionally there may be a little stinging pain coming on immediately but more frequently about twenty to thirty minutes after injection. This may last about one hour. It is relieved by a hot Sitz bath.

Following injection, the patient may go about his business but should be cautioned not to do any heavy lifting for about twenty-four hours

as this may tend to prolapse the hemorrhoids. If this should occur, they must be immediately replaced as otherwise a painful thrombosis will occur.

NUMBERS OF INJECTIONS: Most proctologists feel that injections should not be made oftener than once a week. This has been the practice at the Massachusetts General Hospital. Perrin[12] states that his patients averaged six injections. McEvedy[8] reports that ten to twelve are necessary in some cases of prolapse. The average number of injections is about three or four.

RECURRENCE: Morley[11] states that, using a twenty per cent phenol glycerine solution, 83.4 per cent of cases had no recurrence in three years, while McEvedy[8], though not quoting definite figures, feels that about ten per cent recur in three years. Yeomans[17] estimates recurrence to be five per cent to fifteen per cent in three to five years. This is in accord with the findings at the Massachusetts General Hospital.

COMPLICATIONS: As a rule, these are very few and not severe. McEvedy[8] has reported four cases out of 300 of unconsciousness and a few with influenza-like symptoms with the use of phenol and almond oil. Such symptoms have been practically eliminated since using smaller amounts and a fresh solution. He also reports two cases of ischiorectal abscess which he attributes to insufficient sterilization. Fansler[2] states that he knows of three cases of recto-vaginal fistula. These were not his own cases. Yeomans[17] reports several hundred cases with no severe complications; while Perrin[12], using twenty per cent phenol in oil and glycerine, reports no severe complications out of 800 cases. Kilbourne[7] in a study of the results of fifty-seven proctologists states that the mortality has been nil, slough 1.09 per cent, stricture 0.02 per cent, and hemorrhage .279 per cent. At the Massachusetts General Hospital from January, 1930 through November, 1932 there have been thirty-two cases of slough, five of these from the use of five per cent phenol in oil, and twenty-seven from quinine and urea hydrochloride. None of these have been severe and all have subsided within a week or two. Although more sloughs occurred from the use of quinine and urea hydrochloride than from the use of phenol in oil, it should be remembered that the latter solution was used in but a small proportion of cases. Severe pain was noted in three cases and prolapse with thrombosis in seven cases. The latter complication we feel is usually due to the fact that when prolapse occurs, the patient does not reduce it promptly. It is rather difficult at times to impress on the average out-patient how important this is.

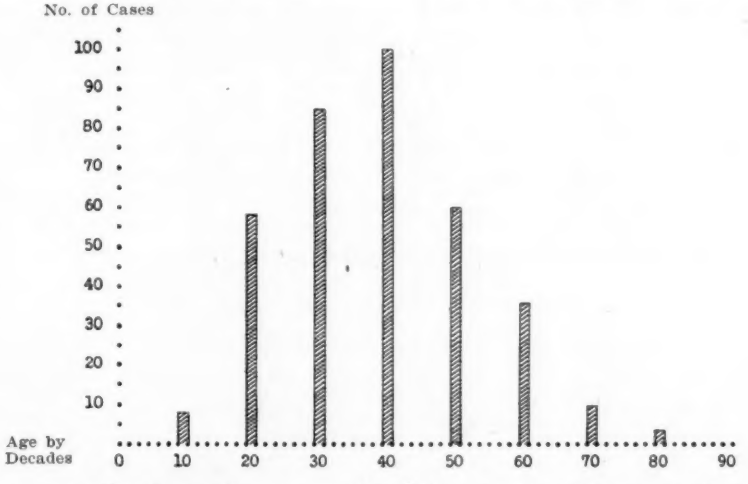
A more detailed analysis of the cases treated at the Massachusetts General Hospital follows:

Number of cases treated	359
Male	227
Female	132

We feel that this difference in the sexes is due to two factors; first, that males do heavier work which predisposes to the occurrence of hemorrhoids; secondly, females are more reluctant to report to a general clinic for rectal troubles than are the males.

AGE INCIDENCE:

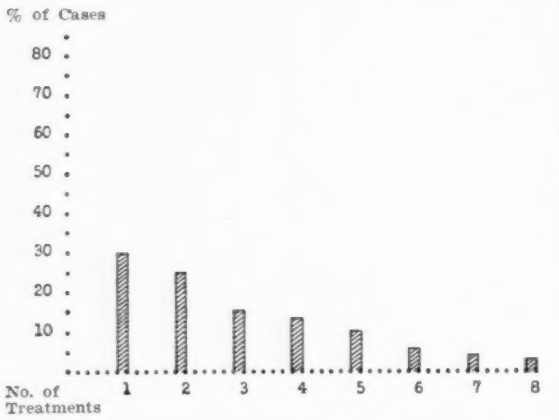
From this table it can be readily seen that the great majority of cases lie between twenty and sixty, a rather broad age distribution.



QUADRANTS INVOLVED: No accurate data are available on this but in general the right side is involved more frequently than the left. The left anterior quadrant is much less frequently involved than are the other three.

SYMPTOMS: Bleeding *only* was complained of in twenty per cent of the cases; pain alone in two per cent; protrusion only in three per cent; and constipation in forty per cent. The majority complain of a combination of these factors.

NUMBER OF TREATMENTS REQUIRED FOR CURE OF SYMPTOMS:



Ninety-one per cent of cases required five treatments or less to secure a clinically good result.

ANALYSIS OF CASES OPERATED UPON: The rectal clinic was organized in 1928. In 1929 forty-two cases of hemorrhoids were operated upon in the hospital; in 1930 twenty-six only, a little more than half the number in the previous year; while in 1931 only six cases came to surgery and in 1932 only five cases. These figures we feel show pretty well how successful is the injection treatment of the average case of hemorrhoids.

SUMMARY: A brief résumé of the history of injection of hemorrhoids has been presented as well as a brief sketch of the type suitable for this method of treatment, the technique of performing the operation, the ensuing complications, and the probability of recurrence. A summary of the results in the rectal clinic at the Massachusetts General Hospital has also been presented.

CONCLUSIONS: The injection treatment of internal hemorrhoids can be satisfactorily carried out in about eighty-five to ninety per cent of cases seen. It is almost painless and practically devoid of serious complications. Injection will cure the symptoms of internal hemorrhoids, namely bleeding and protrusion, and if these do recur, they may be relieved by subsequent injection. Patients are satisfied with the results.

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MALNUTRITION: THE MEDICAL OCTOPUS

BY JOHN P. SUTHERLAND, M.D.*

WHAT are we to understand by the term "Nutrition"? According to physiologists, nutrition is that biological property characteristic of living structures, of taking extraneous substances into themselves, disrupting these substances and recombining the elements into cells and tissues to form their own organisms and carry on the functions characteristic of the organism itself.

However defined, Nutrition is the most essential and fundamental function of all living things, whether belonging to the vegetable or animal kingdom, and food is absolutely essential to nutrition and the maintenance of life, i.e., of body temperature, energy, growth and all psychic and physical activities; and it goes without saying that a correct and balanced ration is necessary to an ideal and normal state of any organism.

By way of emphasis certain aphorisms common among laymen may be quoted. For instance, "a girl cannot make a silk dress out of a piece of flannel"; "a man cannot build a fireproof house out of inflammable material"; or less elegantly "a person cannot make a silk purse out of a sow's ear".

These aphorisms by common consent are recognized as universally true and indisputable. It equally will be admitted that a man cannot make (or create) a fish, a bird, or even a microbe; he cannot make a tree or shrub or flower; he cannot make a metal or chemical element; he cannot make a potato, a kernel of corn or rice or wheat; a berry or any kind of fruit or nut. In

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a word he cannot create his food. He can, if he is wise, accept and make use of the food created for him by a beneficent nature.

All these and countless other things have been and are constantly being made by an invisible energy for man's appropriation and utilization; in a word, his use. And there are certain immutable laws governing the growth, action and reaction of them, and all of their characteristics. Man may and does utilize these products of creation but his use of them is inevitably and positively controlled by the accompanying laws.

Life and nutrition are most intimately connected, being interdependent. Biologically, life is defined as a process or a condition manifesting itself by irritability, nutrition, growth and reproduction. Normal nutrition signifies a condition of health. The more normal the nutrition the more perfect the health. Health is then evidently dependent on nutrition; and an unbalanced or imperfect nutrition unquestionably leads to or produces imperfect health. It should not be forgotten that nutrition ends where katabolism begins; that is, nutrition is anabolic or constructive, whereas katabolism is destructive.

Does the average person know from the biologic and chemical standpoint what is needed in the way of food for the upbuilding of a normal, enduring, disease-free human body? The inspection of family menus, of the menus of restaurants, hotels, cafeterias, delicatessen and other food shops, and the so-called food offered for sale at bakeries, grocers, confectioners, etc., will furnish an answer to this question.

Even the medical profession is not so well prepared to speak "ex cathedra" on this subject as it should be. For in medical schools the important subject of food and nutrition never has been and is not to-day studied with the scientific ardor and thoroughness characteristic of pathology, anatomy, embryology, physiology and other medical sciences;—possibly because nutrition is not yet a science.

Malnutrition shows itself according to its degree; first in discomfort and mild symptoms, functional in character. Gradually only do these disturbances assume an organic change and become fixed physical entities. The abnormal may, of course, manifest itself to any degree, from the almost insignificant and trivial to the most devastating and even fatal results.

Briefly a few clinical cases may be referred to by way of illustrating common and not very serious conditions of malnutrition and yet baffling and obstinate to the medical practitioner; interfering with the health and efficiency of the patient and being quite outside the influence of pharmaco-therapy.

1. A young man, aged twenty-two, height 5′ 8½″, weight 155 pounds, a college student now in his junior year. His chief complaint at present is alopecia totalis, which for a year and one-half has been present and gradually increasing in spite of much and varied treatment from its incipiency to its existing total baldness, not a hair on any part of the body. He is stockily built and of light to fair complexion. He is affable and genial and not very seriously distressed over his condition as he has no pains or actual suffering. He sleeps well and eats freely without any sign of indigestion. His bowels are fairly active. His urine he quotes as "normal". His physical strength is fair though he is not inclined to athletics.

Why this inefficiency, this deficiency of the function of the skin?

But this is far from all.—He has been free from venereal disease and from such exhausting diseases as typhoid, malaria, erysipelas, etc. But the greater part of his life he has been afflicted with eczema for which he has had a great deal of apparently non-curative medical treatment. The eczema receded as the alopecia appeared. In addition he has had, which is unusual for his age, over 100 fillings in his teeth. Why so much dental caries at his age? What does it indicate?

His hemoglobin is somewhat below the standard.

The whole picture is one of weakened, long-lasting insufficient or inefficient metabolism. Endocrinology may come to the rescue but how about endocrine glands? Are they not a part of the body? And were they not formed originally from food by the process of nutrition? And is not their continued existence and activity maintained by food and nutrition? The patient's affliction is not a germ disease and heredity alone cannot account for its etiology and pathology. Evidently it is a case of malnutrition.

2. This is a case of mother and daughter. The mother, aged fifty, 5′ 0″ in height and 154 pounds in weight (approximately thirty pounds overweight) never has had good health. She has had general psoriasis with more or less severe pruritus since she was thirteen or fourteen years of age, and has spent "all her money on it". She has warts and keratoses all over the body; lost most of her teeth before she was forty, and had the remainder extracted seven or eight months ago. She had complete oöphorectomy and hysterectomy four and one-half years ago (reason not known); and a bi-lobed thyroidectomy two years ago. She cannot blow her nose on account of "catarrh", probably has sinus and turbinate trouble, and has pain in the right mastoid region. She is "full of symptoms". She drinks an indefinite amount of coffee and "eats anything". Her bowels are moved by castor oil, salts, Ex-lax, etc., but they never move spontaneously. Her heart is 80

when she is standing, and is without disease. Her blood pressure is 170-110. Her tonsils are big, red, but smooth. She cannot drink water as swallowing is difficult. She knows nothing of her urine save for frequency. Her intellect is of inferior quality.

Very evidently the present condition of this woman is one which has slowly developed and, while nothing can be learned of her heredity, it is only reasonable to assume that much of her history and present state is the result of an unbalanced and insufficient nutrition. In a word a clear case of malnutrition. Certainly she never has been worthy physically or mentally for motherhood, but yet she has had two living children and one still-born.

One of her daughters is aged twenty-two, 5′ 7″ tall and weighs 125 pounds. She is therefore not overweight, but she lacks initiative and energy. She did not graduate from the high school, making the second year only and then giving up. (Mental deficiency?) She is exceedingly "nervous"; cries easily and frequently, without reason; gets angry easily; does some reading but no studying; sleeps much; stays at home all the time; does not mix with girls of her own age; has no social life; does not go to dances or amusements of any kind; is not fond of sport except swimming. Menstruation came on at sixteen years of age; has always been regular; but she is in bed the first day "with bad cramps." The periods last five days and seem normal but for the dysmenorrhea which, according to many observers, is an evidence of malnutrition. This patient has no indigestion, though she has lost all her molars. Her bowels have always acted normally. She had tonsillectomy and adenoidectomy when seven or eight years of age. Her throat seems capacious, roomy and normal.

Heredity, of course, laid a sufficient foundation for neurasthenia and neuroses generally; but how about her teeth, dysmenorrhea and malaise? A more suitable nutrition would doubtless have lessened if not wholly prevented her deficiencies, and also much of her malnutrition.

3. A man, twenty-eight years of age, 5′ 6″ tall, never has weighed over 119 and now weighs only 98½ pounds. He is married, but is without children; he is able to work steadily and has been free from ordinary diseases. His complaint might be diagnosed gastralgia, for he has severe "tightness and heaviness" in the epigastrium often immediately after eating. This lasts a variable period, and gradually disappears. He says he "eats too much and too often". But his diet is monotonous, its variety being unusually limited. He is a very rapid eater and will often eat five bananas at luncheon, and nothing else. He has no clinical indications of gastroduodenal ulcer or organic disease. His bowels have been maltreated with catharties. His blood and urine are reported normal. He sleeps well. In voice, speech and general demeanor he seems very effeminate, but his work calls for a considerable degree of strength. His blood pressure is 122/78. He is nearsighted and wears glasses. His hearing is all right and his teeth are in fair condition.

This patient is very far from being a specimen of well-nourished manhood and yet he has no developed physical abnormality. His wife and mother worry very much more about his condition than he does; a psychic influence probably not good for him.

His condition may rationally be considered as belonging in the category of malnutrition and while no definite disease can now be recognized he is headed in the direction of a fall and unless suitable nutritional habits can be established his future suffering is sure. Pharmacotherapy in his case has been tried and found wanting.

4. The last clinical case to be referred to is that of a young man of about thirty years of age. His height is over 6′ 0″ and his weight at its maximum was 236 pounds; but under reasonable diet he is now 220. He is married and has one child. Withal of a large bulk, the patient is kind-hearted, good-natured, affable and genial. His opinions are apt to be positive. His scholastic attainments are rather meagre, for he did not graduate from high school and desultory study since high school age has resulted in mental expansion of mild degree only. His business experience has been disheartening on account of the world-wide industrial depression. He had, during adolescence, several of the diseases of early life, always making an excellent recovery. He maintains that he is well and "all right", but he is not. He cannot exercise without discomfort; a brief walk or dance exhausts him and, puffing more or less from dyspnea, he is obliged to rest. On rising from a sitting position his pulse immediately climbs into the 90's and even over 100. The tachycardia lasts until he sits and rests. Cardiac hypertrophy, valvular disease, coronary troubles, etc., are not yet evident physically. His heredity may suggest the possibility of cardiac disease now or in the near future, for his father died very suddenly after only two or three weeks of preliminary suggestions of cardiac trouble. The pleasures of the table have appealed too strongly to this patient and he has eaten unwisely and has taken beer and alcoholics too freely with a consequent malnutrition which has eventuated in corpulency and tachycardia which may prove his undoing. The outlook is not good for him unless something more than pharmacotherapy can be used in his treatment. The rational thing is a radical, sensible, physiological dietetic reform to overcome the malnutrition from which he is now suffering. His blood pressure is 140/90 and his hemoglobin 85 per cent.

In these recitals, diagnostic details and laboratory reports, some of which might have been included, have on account of limited space been omitted. Nothing of real value, however, has been overlooked.

Contact with cases similar to the preceding is a common thing with most general practitioners; though such patients as a rule are welcomed in only a few consulting rooms. They may not produce tangible "disease pictures"; their pathology may be nil; but they are abnormal, distinctly below the standard in some, possibly in many respects. They suffer or are incapacitated to a greater or lesser degree. To treat them as psychoneurotics and prescribe a placebo or some psychoanalytic, or hypnotic suggestion, stimulant, tonic, or climatic or environmental change is not enough. Any of these methods may find a niche in the treatment but here also, fundamentally, proper nutrition is a necessity if any improvement is to be accomplished.

To consider briefly the different stages in the span of human life our attention may be turned to that most vital period, the initial stage of infancy. The most important stage, the prenatal, is not even yet appreciated at its full significance by the majority of human beings, though within recent years prenatal clinics, instruction, and advice have been available and applied for in all our medical centers, and must be looked upon as one of the prominent signs of a philanthropic, enlightened and advancing civilization. The prenatal life is unquestionably wholly one of nutrition and its great importance is incalculable. "As the twig is bent so the tree inclines"; and expectant mothers throughout the world should be taught the vital influence on their progeny and on the human race they hold, as it were, in the "hollow of their hands." At all events they are to an enormous extent the custodians of human health and welfare.

It is the duty of parents and of all who are connected with the education of the young, to teach the rising generation of young women something of the possibilities of pregnancy and the great and wonderful responsibilities of the prospective mother in the prenatal and also the postnatal nourishment of their progeny. A woman is not fit to be a mother simply because she is a woman. The prenatal life is more valuable to the individual child than is any other stage of its existence. The postnatal comes next in importance. During both of these periods the child's future welfare is to a large extent in the control of the mother. Everything, therefore, depends upon her own nutrition and intelligence. Suppose a breast-fed infant has some or many of the diseases common to this early period of life, is the fault due to mother or child? In the great majority of cases the difficulty is maternal, the mother being unable to supply her child with good, wholesome milk. She is below standard and therefore the child suffers. During this postnatal stage, the infant is or may be the subject of many diseases. Among the most prevalent are those of the gastro-intestinal tract, as these organs are so intimately connected with the nutrition of the infant. The various forms of indigestion; regurgitations, vomiting, gastric flatulence, constipation, cholera infantum, forms of colitis, inanition to marasmus, colic and convulsions, disturbances from dentition, insomnia, fretfulness, crying, coryza, head colds, sore throats, etc. are frequent manifestations of gastro-intestinal incompetency or more frequently of a maladjusted diet. Aside from the infectious diseases these are the most common at this stage and until within very recent years the most fatal. The mortality among infants all over the world: India, China, Africa, South America and among the so-called primitive races, has been exceedingly high and even among the civilized nations infant mortality has exceeded that of any other similar period of life. Attention might be directed to certain statistics kindly furnished by Dr. M. Luise Diez, Director of Child Hygiene of the Massachusetts Department of Public Health.

MASSACHUSETTS

Year	Number of Live Births in Mass.	Number of Deaths under 1 Year	Rate per 1000 Live Births
1914	93399	9894	106
1915	93155	9490	102
1916	93487	9334	100
1917	95731	9325	97
1918	95607	10820	113
1919	87827	7769	88
1920	91859	8382	91
1921	92245	7005	76
1922	87636	7129	81
1923	89210	6968	78
1924	91463	6191	68
1925	86014	6294	73
1926	83502	6130	73
1927	82273	5320	65
1928	79054	5118	65
1929	74122	4592	62
1930	73690	4440	60
1931	69385	3803	55
1932	68518	3635	53
1933	63457	3294	52

The preceding table shows not only the decreasing number of births in Massachusetts during the period of twenty years but it also shows the marked decrease in the total number of deaths as well as the ratio of deaths under one year of age from 113 per thousand live births in 1918 to 52 in 1933, a decrease of more than fifty per cent. The required pasteurization of milk aided at times by immunotherapy has practically done away with typhoid fever, septic and other sore throats, erysipelas, diphtheria and many other infectious disorders in addition to the more ordinary forms of infection leading

to the common gastro-intestinal disorders, an unquestionable victory of science over ignorance and carelessness.

It is natural to ask why this decrease. The improvement is due chiefly to the modern control of the substitute feeding of infants. Most unfortunately a large percentage of mothers, civilized and uncivilized, are unable to nurse their children at all, or only in part. Often nursing may be continued for months, but the milk furnished the infant may be insufficient in quality to nourish the offspring. Milk is one of the big wonders of creation; only mammals secrete milk, and according to the classification of mammalia there are approximately two thousand species and practically as many varieties of milk; each species producing the quality and quantity of milk best fitted for the nutrition of its offspring. Man is the only mammal that habitually takes milk after the period of weaning, and he takes liberally the milk of distinctly sub-human and greatly inferior animals; a milk intended specifically for the nourishment of animals of a much lower order than man. Sometime man will know more than he now does about the chemical and biological composition and significance of milk, and will have greater regard for nature's provision and wisdom.

The commonly accepted views concerning milk are reflected in one of the latest utterances on the subject by Brown and Tisdall of Toronto, Canada, in a paper on "The Effect of Vitamins and the Inorganic Elements on Growth and Resistance to Disease in Children." This paper was presented in part before the British Medical Association in London in 1932 and read at the Montreal meeting of the American College of Physicians in 1933. These authors say that "from the standpoint of the child's diet, it may be stated that it is absolutely impossible to furnish an adequate amount of calcium unless liberal amounts of milk are included in the diet". These are strong words and they should attract the attention particularly of mothers, because their milk must supply sufficient calcium and phosphorus as well as iron, iodine, copper and the other elements spoken of by these authors as essentials in the diet of children. In this connection it may be asked, Where and how do cows get the liberal amount of lime found in their milk? Evidently from grasses only, when living their natural lives, or from grasses and grains when domesticated. At all events the cow cannot make calcium any more successfully than the human mother can. The cow gets its calcium and various salts from its monotonous, simple, unvaried vegetable food and from no other source. Why should not the human being, child or adult, be able to acquire its food essentials, calcium and other minerals from natural sources, especially since the human being has such an astonishing variety of natural foods to use? Nature says the mother precedes the child. And no foster mother, even the most scientific nursing bottle, can substitute fully for a normal mother.

Another question in this connection calls emphatically for consideration; and that is "What is the significance and lesson of the weaning period?" This period was established by nature, not by man, and is universal among mammals. Without reasonable doubt it means that no mammal needs milk after weaning. At all events it is not available except as a result of man's ingenuity and as a commercial venture on the part of the dairyman.

Closely connected with weaning is the process of dentition, which should be well under way when the weaning period arrives. Considering the undisputed importance of dentition, in the lives of the young, and the various troubles all through life arising from imperfections of the teeth, it is the wisest service that can be rendered at this time earnestly to call for consideration of an admirable article by Dr. Joseph Garland entitled "Dental Health; a Problem in Nutrition," and published in the March 15, 1934 issue of the *New England Journal of Medicine*. One should not attempt to give any idea of the valuable, comprehensive, assuring, positive teachings of the paper by quoting even liberally from it. One may, however, be pardoned for quoting as follows:

"Our appetites and our genius for satisfying them have betrayed us;" . . . "the teeth are indices, sometimes the only obvious ones, of the general state of nutrition," and his concluding sentence "We are realizing at last that those foods which are nearest at hand, which are most edible in their natural state and which require the least preparation and processing are the best suited to our needs."

One should remember that having various dental cavities filled and cared for *does not cure the trouble,* though it may temporarily bridge over the condition for an uncertain interval. The constitutional malnutrition which usually is at the root of the decay persists and must be recognized and treated in order to bring about a cure.

It is impossible to consider in detail each and all of the diseased processes encountered during the stage of infancy. Enough possibly has been said to show the vast importance of a rational and truly natural dietary during this period. The periods of childhood and youth merge together quite intimately; and the diseases common to the combined periods are much the same in character. The foundation has been laid during the prenatal life and the first postnatal year. Now the superstructure is to be raised.

This is the period of the acute, eruptive and contagious diseases. Dental difficulties are always present; eczema, acne and skin diseases prevail; sundry blood abnormalities are apt to show themselves; but during this vital period nutrition is on a very high level, and growth in stature and mental characteristics is astonishingly prominent. Growth and general development, however, are under exceedingly inflexible laws and these laws must be observed if best results are desired. Hit or miss methods of feeding are not permissible. Resistance to the epidemic, infectious, eruptive diseases is notably greater, according to our best observers, among those whose nutrition is kept at the highest level by judicious feeding. The following authoritative utterance is appropriate in this connection:

"The physical well-being of the nation is dependent on two factors, heredity and environment, and the most important environmental influence to which we are subjected is food. Food enters more closely and intimately into the metabolic processes and affects them more profoundly than any other external influence. It is now generally recognized that a suitable food supply and its rational utilization are of cardinal importance in maintaining the health and efficiency of the community."

"The first official report issued on the physical examination of recruits during the late War revealed the fact that a substantial proportion of the population of this country, [Great Britain], suffers from physical defects which are largely traceable to abnormal or arrested development during the period of life when growth is most rapid. Every addition to knowledge indicates more and more clearly that physical defects of this kind have their origin largely in improper nutrition, resulting from deficient or unsuitable dietaries during early life. . . . Breast-fed infants of well-nourished mothers can withstand conditions of life that would be fatal to others not so well fed. The children of crofters though often living in overcrowded hovels are remarkably free from rickets, whereas children living in better surroundings but improperly fed, fall readier victims to this disorder of nutrition. The incidence of tuberculosis in a community appears to be closely correlated with the food supply; it diminishes when the food supply is ample and suitable and increases when, for one reason or other, food is difficult to obtain and the quantity and quality of the diet become inadequate." And much more to the same effect in the article "Qualitative and Quantitative Aspects of Nutrition in Relation to Public Health," by J. M. Hamil, O.B.E., M.D., D.Sc., from which this quotation is taken. (From "The Imperial Bureau of Animal Nutrition" printed in "Nutrition Abstracts and Reviews," Aberdeen.) Attention was called to this article by Dr. Percy R. Howe, Director of the Forsyth Dental Infirmary, whose original food investigations have attracted nation-wide notice and whose biological researches with unbalanced rations have revealed startling and convincing facts.

To emphasize the views expressed in the preceding quotation, some statistics obtained from Boston sources may appropriately be presented; especially as they are gathered chiefly from children of school age.

Forsyth Dental Infirmary is one of the well-conducted and useful charities of the city. Here, during 1933, 55,801 children of school age visited the dental clinics for extraction, filling of cavities and correction of deformities of the dental arch. That is, a number equal to nearly one-half the total number of public school children were treated at the Forsyth Dental Infirmary in 1933.

At the Harvard Dental School during 1933 over 9000 patients were treated for various dental troubles, extractions, fillings, etc. Twenty-two per cent or 1980 of this number were children.

At the Boston Dispensary in 1933 there were treated in the morning clinics, including all kinds of dental troubles mostly among children, 12,293 cases, and during the evening clinics 1939 patients, practically all adults, were treated.

These statistics do not by any means give the total number of dental deficiencies which annually occur in a large urban population. Thousands not here included are treated in other institutions or by their private dental surgeons or go without suitable treatment. Remember the quotation from Dr. Garland that "the teeth are indices, sometimes the only obvious ones, of the general state of nutrition." If they are unsound the disorder is not so superficial as the teeth themselves are, but much nearer the source of life and growth.

To view the subject at a somewhat different angle it may be noted that the school department reports a registration of approximately 138,000 children in the public schools of Greater Boston. Of this number there are 2169 in special classes on account of backwardness. Some deficiency is present that prevents their keeping up to the grades: in addition there are many who fail in promotion and others who fail to graduate. Also, from the Walter E. Fernald State School for Feeble-Minded at Waverley we learn that in that institution they have a resident population of over 1800 mentally defective children, 1850 being an average population. In addition approximately 600 children annually are carefully examined for mental defects besides approximately 1500 in allotted public schools. A few months prior to his death, an article by Dr. Fernald was published in the *New England Journal of Medicine*, in which he

claimed that there were 50,000 mentally deficient children in the State of Massachusetts. The opinion at the school at present is that 100,000 would be a conservative estimate of the number of deficient children in the State. The assertion also is made that the mental defect is not the only one apparent in these children. Physical deficiencies of one sort or another with teeth, mouths, noses, eyes; with muscular and general coördination, gait, etc., exist, and they are said always to be "big eaters"; to eat twice as much as normal children do. No special dietetic researches have yet been conducted and no opinion is offered as to the cause or causes of these defects; not even heredity is called to account, yet without knowledge of the cause preventive treatment is practically a hopeless task. No field of inquiry promises to yield a richer harvest of good and useful results than this one. Nutrition offers the most hopeful possibilities of solution of this and allied problems.

Convincing evidence of the influence of good or ample nutrition in minimizing the severity of hookworm infestation is given by Professor Wilson G. Smillie of the School of Public Health of Harvard University in his publications. His extensive experience with, and analytical investigations into, hookworm disease in its native habitat qualify him to speak with authority. He claims that "hookworm disease . . . is the most common parasitic infestation of humanity in the whole world." From the "Intensity Surveys of Hookworm Infestations" and in an article on Hookworm Infestations reprinted from the *American Journal of Diseases of Children*, February 1926, in collaboration with D. L. Augustine, Sc.D., he states that "our Brazilian studies showed that good nutrition plays a great part in the bodily resistance to the effect of hookworm." (Pp. 2-3.) Also on page 12 he says, "Individuals having ample food and excellent living conditions often have normal hemoglobin despite heavy hookworm infestation. Malnutrition and a poor dietary . . . were important factors which affected the hemoglobin of many of the patients infested with the hookworm." And in the same paragraph he concludes a chapter on "Influences of Nutrition on Hookworm Disease" with the statement ". . . that as ample food builds up resistance against the ravages of hookworm disease, starvation markedly increases the effect produced by the worms upon the body."

The period of adolescence calls for attention. Certain abnormal conditions are very common during this stage of life, and are characteristic of it. For instance the oncoming and institution of menstruation in a large percentage of girls are accompanied by physical and mental ills that cause anxiety to many mothers. Irregularities of menstruation are varied and numerous and much too prevalent. For the function of menstruation itself is an absolutely normal one, and should cause no more distress than respiration or sleeping. Delayed menstruation, dysmenorrhea, amenorrhea, menorrhagia and metrorrhagia, ovarian disorders, are sufficiently prevalent to merit analysis and study especially from the standpoint of cause and prevention. Why should a normal function produce suffering? Evidently there is something wrong that brings about such misery. Fortunately competent practitioners, research workers and observers have entered this field with inquiring spirits and have done creditable work in ascertaining a probable cause, and in revealing a possible preventive treatment for these difficulties. Mention might here be made of Dr. Edward Reynolds and Dr. Donald Macomber of Boston, who for years have been industriously studying malnutrition as a possible cause for many if not all of these common ills. It is pertinent in this place to refer to Dr. Macomber's work in the study of sterility, found in his articles:

"Defective Diet as a Cause of Sterility"
"A Study Based on Feeding Experiments with Rats, 1921"

in which Dr. Reynolds participated,

"The Threshold of Fertility in Rats and its Relation to Diet Deficiency, 1923,"
"Effect of a Diet Low in Calcium on Fertility, Pregnancy and Lactation in the Rat, 1926"

and especially in,

"Diet in the Etiology and Treatment of Sterility, 1929."

This last article contains much that ought to prove more than suggestive to the general practitioner, who usually is called upon for help in these cases. For instance we read that "it is my purpose in this paper to review briefly the work on animals . . . and then to present what evidence there is that the same forces are operative in human beings as in animals." This might be considered a biological axiom. It is a perfectly true statement at all events of a biological fact. Man is subject to the same general laws that operate in the entire animal kingdom. Different species of animals may react differently to drugs, for instance, but the general laws of nutrition, growth and reproduction hold good wherever life exists. Macomber in this article presents an analysis of the diet of 206 sterile women. Reference is made to the experiments by Hart, Steenbock, Humphrey and MacCollum in investigating reproduction in cattle which showed "what an enormous effect changes in diet could have on reproduction in the cow". Later in describing the work of Evans in studying the effect of change in diet on the regular occurrence of the estrous cycle, he says, "If the amount of food is still further reduced the

effect is even more extreme and there comes a point at which activity of the reproductive tract ceases altogether or never develops though the animal may continue to function otherwise in a fairly normal manner. . . ."

In a comment on the probable or possible causative relations of endocrine disturbances to sterility, Macomber suggests that the dietary cause, usually of long continuance, capable of producing the sterility may have actually preceded any disturbance of the endocrine glands. He states that so far as he is aware "no one . . . has ever explained what causes these glands to function in an abnormal manner."

Concluding his paper Macomber thinks that "there is a large body of evidence both experimental and clinical which shows that alterations in diet actually do produce sterility. An analysis of the diets eaten by 206 sterile women shows that they deviate in many important ways from normal. A large number of these women show evidences of nutritional disturbances. Of the 206, forty have become pregnant to date, even though practically all of them were seen for the first time within the last two years, and this result has occurred at least in part as the result of changes in diet and such other measures as the increasing of exercise, the taking of endocrine medication or the treatment of anemia. It seems to me, therefore, that we have in diet a means of treating sterility which we cannot afford to neglect." Macomber is not overpositive or overenthusiastic in his statements, but reasonable and conservative in his claims and conclusions. The weight of his writings, however, leans to the idea that dietetic deficiencies are to be looked upon, at least as among the causes of sterility, and therefore when suitably modified, food is possibly the chief of therapeutic agencies.

Not to spend too much time on any one period of life, let us turn for a moment to the major stage of adult and senile existence and consider only a few of the disease possibilities of this period.

If there is any chronic disease that stands preëminently as a typical instance of malnutrition it is beriberi. This disease though it had existed practically from time immemorial and had destroyed untold thousands of lives in the Orient, was not recognized as of dietetic origin until the Russo-Japanese War when the discovery of its cause was announced. Investigations then and thereafter seemed to confirm the accuracy of the announcement. It was not, however, until 1912, that Casimir Funk as a result of his analyses of rice screenings was able to proclaim to the world that he had succeeded in isolating certain chemical elements which he had found in rice for which he coined the term "Vitamines", and which he considered of vital value in maintaining the health of humanity. This discovery, though not fully explaining the cause of the disastrous disease, beriberi, exerted a powerful influence over the thoughts and activities of mankind in both scientific and commercial circles. Without discussing the subject it may be and is accepted as a definitely proved fact that the long-continued eating of polished rice is the cause of beriberi which may therefore be considered "a deficiency disease"; that is, man removes from the rice something that nature provided and the lack of it in the food he eats leads to malnutrition; and in an unknown number of instances to unnecessary suffering and death.

Constipation (sluggish and inactive bowels), with the hemorrhoids, the reflexes and other maladies it gives rise to, is curatively treated by a rationally adjusted diet. Probably over 90 per cent of these cases, no matter how chronic, can be easily and wholly cured by a natural diet, and vast sums of money now spent for laxatives and cathartics, saved to be spent more usefully and less injuriously. This is not an idle or thoughtless boast but simply an unvarnished statement of experience covering a long series of years and rather wide contact with this form of malnutrition.

Probably most forms of indigestion or "dyspepsia" are the result of a preceding malnutrition or of faulty methods of living and are curable not so much by pharmacotherapy as by a reasonably physiological diet. Such difficulties naturally produce malnutrition which leads often to more serious evils. Sick headache, vertigo, cardiac "palpitation", forms of colitis, ordinary diarrhea, and such conditions common throughout life are evidences of malnutrition and in the main are preventable by suitable, nutritive and well-balanced diets.

Corpulency is by very many people looked upon as a sign of prosperity and good health. If at all excessive, it is really a warning sign or danger signal that nutrition *is not well balanced;* in short it is exceedingly significant of abnormal nutrition.

By no less an authority than Joslin, corpulency is looked upon as a precursor of diabetes. According to his latest utterances the chief causes of diabetes are heredity, corpulency and eating extravagantly. Apropos of obesity a few pregnant sentences of Joslin's may be quoted:

"Since insulin, the death rate in Massachusetts from diabetes has steadily fallen for all diabetics under the age of 45 years; above 45 years it has risen, chiefly because of fat women. Therefore if anyone in your family has diabetes, don't get fat, and especially don't get fat if you are a woman with a diabetic heredity.

"If there is diabetes in your family, when you are fair and forty, keep thin.

". . . Diabetes in adults is a disease of the fat." (Page 80, *Commonhealth*, Volume 21, No. 2.)

One justly may claim that obesity is a form of malnutrition; that it is due to eating an unbalanced ration; that is, certain foods are eaten which the body does not need for the work it does. And the excess or the unnecessary food is stored away as fat. This excess of adipose tissue, if not too excessive, may please the esthetic sense; but every pound above a standard weight for skeleton and height of body is a burden on the heart and circulation, the carrying of which calls for the expenditure of much extra energy. When speaking of a patient, an army officer, who when very ill, bore his burdens "like a soldier", Joslin claimed that there are now 400,000 diabetic soldiers in the country. In Massachusetts alone there were 3552 fatalities from diabetes in 1933. And it is estimated that there are 15,000 cases in the state. In the United States during 1931 there were 24,144 deaths from the disease, and in 1932 there were 25,458.

Very evidently diabetes is one of the more prevalent diseases. It causes much suffering and incapacity and many deaths. Its victims are found among young and old, no age being immune; it is most intimately connected etiologically and therapeutically with diet, ordinary medicinal treatment having but little or no effect upon it.

Small wonder then that the Massachusetts Department of Public Health devoted its quarterly bulletin for the months of April, May and June, 1934 to the consideration of diabetes in its various aspects. The bulletin contains over twenty contributions, five of them from Dr. Joslin, and discusses all phases of the subject. It is a stimulating, encouraging study of the subject, and offers what might appropriately be designated an authoritative postgraduate course on diabetes. It certainly is a most instructive symposium on a subject of great importance to individuals, to groups of sufferers and their dependents and to the state whose reputation is established by the intelligent care it gives the health of its citizens. Copies of the bulletin referred to may be obtained by applying to the Massachusetts Department of Public Health, Room 545, State House, Boston.

CONCLUSION

If beriberi, diabetes, rickets, dental deficiencies, neuroses, sterility and other conditions which here have been illustrated and briefly discussed, have as a background or a foundation, a condition of malnutrition, why is it not possible for other diseases such as cancer, cardiovascular diseases, tuberculosis, poliomyelitis, and pernicious anemia to have the same foundation in malnutrition? What promises to be a most useful and fertile field of inquiry is here laid open for research investigation.

One might say the opportunity for rendering an inestimable benefit to humanity stands beckoning the investigator.

EXCERPTS FROM THE INFORMATION SERVICE OF THE ROCKEFELLER FOUNDATION

(Continued from Page 49)

provinces of Canada, and five areas in Mexico, and provided funds for local health units in fourteen other countries; directed the studies of 197 fellows in public health, thirty-two nursing fellows, and six nurse visitors; provided financial aid to former fellows in carrying out special studies; and contributed toward the support of schools of hygiene and public health and of centers of public health training in Japan, Puerto Rico, Central America, South America, Europe, and the United States.

MEDICAL SCIENCES

In the medical sciences The Rockefeller Foundation, during 1933, appropriated $1,173,853. In aid of programs of specific concentration in the fields of psychiatry and public health teaching, appropriations were made to the Johns Hopkins University School of Medicine for research in psychiatry; to University College, London, for work in biophysics and neurophysiology; to Washington University, St. Louis, Missouri, for investigations in nerve physiology; and to the Harvard Medical School and Massachusetts General Hospital for coöperative work in psychiatry. For the development of teaching in public health and preventive medicine an appropriation was made to Dalhousie University, Halifax, Nova Scotia. During 1933 the Foundation provided 295 fellowships in the medical sciences. In addition, research aid grants in sums varying from $55 to $3,000 enabled 61 scientists or groups of scientists to carry on research work.

CONTROL OF INFANTILE PARALYSIS

Dr. W. Lloyd Aycock of the Harvard Medical School, speaking at the recent convention of the American Association for the Advancement of Science at Pittsburgh, warned against accepting too enthusiastically the recent apparently successful attempts of Dr. John A. Kolmer of Temple University and Dr. Maurice Brody of the New York City Health Department in immunizing children against anterior poliomyelitis.

The difficulty lies in finding the right children to immunize, since so widespread is the causative virus of the infection that a very large part of the population becomes immune to it without acquiring the disease itself. Unfortunately there is no practical way of determining susceptibility, although Dr. Aycock believes, as a result of the study of series of cases, that heredity plays a large part in it. There seems to be little question that the vaccine of Kolmer, made from the spinal cords of monkeys, and the formalin-treated virus of Brody are effective in stimulating the production of antibodies.

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.

CASE 21021

PRESENTATION OF CASE

A twenty-eight year old American wool-handler entered complaining of swelling of the legs, abdomen and face.

Five months before entry after a bridge game one evening, the patient noticed that his legs were stiff and that his lower legs and ankles were swollen. When he awoke the next morning he found that his legs had returned to normal, but his face, eyes and neck were swollen. They remained swollen for three or four hours and during this time the swelling in the legs gradually reappeared. The edema of the legs during the afternoon and evening and of the face and neck during the early morning hours persisted for two weeks. There was no pain associated with the swelling. A physician told him that he had nephritis, put him to bed and prescribed a diet consisting of skimmed milk and vegetables. He was not allowed to have meat, fish or eggs. His physician also told him that his urine showed albumin. He remained on this régime for two weeks, was up and about at home for the following week and then returned to work, the swelling having disappeared. Two weeks later he caught cold while fishing on a wharf and another period of swelling similar to the first episode occurred. This diminished after about two weeks, but increased following a cold that he said he acquired playing golf. During the ten days before admission he noticed for the first time that his abdomen was becoming larger and that he also had some shortness of breath after meals. He continued to work until a few days before entry. His urine had not been cloudy or bloody, but he had occasional nocturia in the past six months which had become more prominent in the past three weeks. Before the onset of this illness his weight had been 150 pounds. Since then he had gained approximately 15 pounds.

The family history is non-contributory.

He had been married three years. His wife and two children were living and well.

He had had a tonsillectomy in childhood. There was no history of sore throat except one associated with an upper respiratory infection five years before entry.

Physical examination showed a well-developed and nourished, sallow, pasty-looking man in no acute distress. The skin and mucous membranes were pale. The fundi were normal although the outlines of the discs were not very clear. The lungs showed flatness, absent breath sounds, tactile fremitus, and whispered and spoken voice at both bases, above which there was increased resonance, bronchial breathing, tactile fremitus and whispered and spoken voice. The heart was not enlarged to percussion, the left border of dullness being 8.5 centimeters from the midsternal line. The sounds were of fairly good quality with a soft systolic murmur at the apex. The blood pressure was 130/90. The abdomen was distended and a definite fluid wave was elicited. The liver and spleen were not felt. The penis and scrotum were edematous. There was marked pitting edema of the sacrum and lower extremities.

The temperature was 99°, the pulse 90. The respirations were 22.

Examination of the urine showed a specific gravity of 1.020, a trace of albumin and a sediment containing four or five white blood cells and from four to eight granular and hyaline casts per high power field. An Esbach determination of the albumin showed it to be 10 grams per liter. Examination of the blood showed a red cell count of 5,510,000, with a hemoglobin of 90 per cent. The white cell count was 8,000, 77 per cent polymorphonuclears. Two stool examinations were negative. The phenolsulphonephthalein test showed 70 per cent excretion, 45 per cent of which occurred in the first fifteen minutes. A Hinton test was negative. The serum protein of the blood was 4.2 per cent. The non-protein nitrogen of the blood was 20 milligrams.

He was put on a high protein, low salt diet, and fluids were limited to 40 ounces. On the fourth day he began to complain of right lower quadrant pain which was fairly constant but not colicky. Examination at that time revealed definite right lower quadrant tenderness. His temperature rose suddenly that day to 102.6°, and the white blood cell count rose to 15,500. That evening there was right flank and right costovertebral spasm and tenderness. The abdomen was tense. A rectal examination was negative. Examination of the urine continued to be approximately the same as on admission except for the presence of three to six red blood cells in three out of five examinations. The serum sodium was 138 milli-equivalents, the serum chloride 108. His abdominal pain subsided somewhat on the seventh day, but he still continued to have considerable ascites. That morning the white blood cell count was 2,600 and 2,400 on three successive counts. A differential showed approximately 75 per cent polymorphonuclears. The temperature fluctuated around 103° and the pulse around 130. He developed

a peculiar erythema of the skin. An abdominal tap yielded only two cubic centimeters of yellowish fluid with small flecks. A culture of this fluid and also a blood culture showed pneumococcus. He continued to go downhill, his white count reaching as low as 1,200. He died on the eleventh day.

Differential Diagnosis

Dr. Myles P. Baker: The history is consistent with insidiously developing chronic active Bright's disease. The cases that come into the hospital with their chief complaint an unmanageable painless edema without any of the dramatic symptoms of acute onset are in general the cases in which the prognosis is not good. One finds in the carefully studied nephritis at the Rockefeller Institute that the cases of hemorrhagic Bright's disease with a low serum protein at the onset, massive albuminuria and edema, carry a poorer prognosis than the cases in whom the symptoms are apparently more frightening at the onset. His story is characteristic of Bright's disease in that he has had recurrent edema in association with upper respiratory tract infections three times in the five months before entry. He had been either at first sent to bed in an attempt to get rid of the edema, or, as patients so frequently do, went on working despite the edema and came to the hospital only because it became more unmanageable, and symptoms such as dyspnea and swelling of the abdomen began to alarm him.

The physical signs are characteristic—edema below the waist, ascites, hydrothorax. He has no definite arteriolarsclerotic hypertension. The fundi showed no arteriosclerotic nicking of veins, no exudate or scarring, none of the characteristic picture of long-standing chronic glomerulonephritis.

As regards the urine, we have only one note about the specific gravity, 1.020; if corrected for the amount of excess of albumin that he has in the urine it comes down to 1.016 or 1.017, but we do not know whether his ability to concentrate is impaired. It is important that there is no evidence in the case of recurrent gross hematuria. The serum protein is definitely diminished, probably largely the albumin fraction. This is usually seen in association with this type of renal edema.

In his subsequent course, he went for three or four days with no striking change and then developed signs of right lower quadrant infection with a rise in the white blood cell count, without definite proof of acute appendicitis.

Obviously they temporized with the case because it is not the type of patient on whom one wants to interfere surgically. There is little change in the urinary sediment in these next few days save for the appearance of a few red cells, so frequently a finding if case reports of "genuine" nephrosis are carefully scrutinized. The importance of the serum sodium and serum chloride is that they bear out the normal non-protein reading and phenolsulphonephthalein test in that we are not dealing with severe renal insufficiency. He went on to develop what so frequently is the terminal picture of these cases, a pneumococcus peritonitis and septicemia, which is fatal. Occasionally one sees a rare instance where some sort of febrile episode will serve to diminish the edema. Cases have been reported of that. There was one boy on the East Medical service three years ago who came in with very much this sort of story. He developed right lower quadrant infection which took care of itself, was later drained as a pelvic abscess; and he has gone on in the past three years to a point where his renal lesion appears to be healed. Only one of Addis' fifty cases has a similar story of progress to healing after a period of chronic renal edema. Usually when a case of Bright's disease develops pitting edema of this type a latent stage is all we can hope for with ultimately renal insufficiency.

One is tempted in a situation like this to bring up the question of nephrosis because after all this man's picture fulfills most of the rather rigid criteria stated for the nephrotic syndrome. He has marked protein loss in the urine, the plasma albumin is indubitably low; he has no hypertension of an established sort. He has only occasional red cells in the urine, certainly no gross hematuria that we know of, and there is no blood non-protein nitrogen retention. Pure nephrosis with these clinical characteristics and with kidneys that are not contracted at autopsy is a rare disease seen usually in children. Even in some of the autopsied cases on children signs or evidence of mild glomerulonephritis will be found microscopically; so that we really have no right to suppose that this man at the age of twenty-eight will show no evidence of glomerular damage at autopsy. The chances are very much against it.

I should be very much interested to know what Dr. Mallory thinks of the recently published work of Blackman at Johns Hopkins. He has observed a good many cases, on the Harriet Lane Pediatrics wards, of nephrosis with chronic pneumococcus infection, and has done a great deal of experimental work with a pneumococcus (I) autolysate, in animals. He believes that with the toxin he can bring about a nephrotic picture in animals, whose kidneys show definite glomerular damage, in degree proportional to dose of toxin administered. The importance of the work, it seems to me, lies in the way in which it takes nephrosis out of the realm of the mysterious and places it in very much the same category as glomerulonephritis, differing only in degree rather than in kind.

I believe this man will show—because we know that he has not had a very long story of

illness and dies with sepsis, not uremia—kidneys that are not markedly contracted, perhaps almost normal in size, with marked degeneration in the tubules, of course, and probably in the glomeruli; also, focal scarring and perhaps more evidence of very active glomerulitis than we gather from the history.

Clinical Discussion

Dr. Walter Bauer: This man came in while I was on the visit. It was our feeling that he had glomerulonephritis with a nephrotic syndrome. We had interpreted the abdominal pain from the time of its first appearance up to the time of exitus as being due to a complicating pneumococcus peritonitis. I do not believe that there is such a disease as a true nephrosis, nor do I think we can say that the so-called nephrosis patients have only tubular disease. It would seem that one has no right to speak of a glomerulus which is capable of allowing grams of albumin to come through each day as being normal even though there be no demonstrable change in the glomeruli by the ordinary histological methods. Such a glomerulus cannot be considered a normal glomerulus, physiologically speaking. A few years ago, Dr. Bell was able to show very definite changes in the glomeruli in cases diagnosed as nephrosis by special staining methods. Yet, some of these kidneys on first appearance seemed to show nothing more than a true tubular lesion. Therefore, I believe that in this type of nephritis we always have some glomerular involvement.

Clinical Diagnoses

Chronic glomerulonephritis (nephrotic syndrome).
Pneumococcus peritonitis.

Dr. Myles P. Baker's Diagnoses

Chronic glomerulonephritis.
Pneumococcus peritonitis.

Anatomic Diagnoses

Acute glomerulonephritis with secondary nephrosis.
Pneumococcus (Type I) peritonitis.
Pneumococcus (Type I) septicemia.
Bronchopneumonia.

Pathologic Discussion

Dr. Tracy B. Mallory: The autopsy in this case showed almost exactly what was predicted. The only variation was that the lesion seemed rather more acute than Dr. Baker apparently expected. The date of onset of the average case of nephritis is nearly impossible to determine from the history and one generally is safe in assuming that the renal damage is more chronic and extensive than the story suggests. In this case, however, the tables have been turned. Grossly we found rather swollen, pale kidneys, without any hemorrhages or any trace of scarring on their surfaces. It was impossible in the gross to say whether it was nephritic or nephrotic. Microscopically there was a very acute but rather mild glomerulitis and also a certain amount of tubular degeneration, on the whole much less striking than the average case with this symptomatology would show. With ordinary stains the tubules merely seemed unusually dilated and filled with large amounts of albuminous detritus. With fat stains we found a great deal of fat in Henle's loops, a very unusual place, and a slight amount in the convoluted tubules. Very little in the way of acute degeneration of tubular cells could be made out.

The terminal event of course was a pneumococcus peritonitis and along with that a pneumococcus septicemia and a terminal pneumonia. During the very last stage of his illness the white count steadily dropped; there is one reading as low as 1200. The bone marrow shows a marked diminution in the number of myeloblastic elements and a very considerable increase in the number of plasma cells, a picture that is often seen in the later stages of true agranulocytosis.

Dr. Harold L. Higgins: We discussed at one of these meetings a case* of nephrosis in a boy of twelve, who had a pneumococcus peritonitis and also had a low white count, around 2,200, just before he died.

I think this present case is typical of nephrosis as we see it in children, especially as to the course. He had three attacks of edema and nephrosis from the first two of which he seemed to recover. It is rather interesting to note that he improved on what we might call a restricted or low protein diet, whereas he did not recover on the high protein diet which was given him later.

Dr. Mallory: The greatest danger in these cases is infection. I think an argument can be raised against bringing a case of this sort into the hospital. We have very little to offer in the way of therapy and the possibility of infection leaps up when they are placed in the wards of a hospital.

In answer to Dr. Baker's question about Blackman's work, I think it is impossible to judge it at the present time. There is no chapter in the entire history of experimental medicine more replete with errors than the experimental production of renal disease. Glomerulonephritis, for instance, has been produced by a score of different investigators in as many different ways, yet it is questionable if any of the methods has been successfully checked in a second laboratory. There can be no doubt, of

*Case 18132. New Eng. J. Med. 206:694 (March 31) 1932.

course, of the clinical association of nephrosis and pneumococcus infections and perhaps Blackman is right that we have all been putting the cart before the horse. Further evidence is certainly necessary, however, before we can regard the relationship as an etiologic one.

CASE 21022

Presentation of Case

A fifty-nine year old American housewife entered complaining of abdominal pain and distention.

Approximately one year before entry the patient began to have small shock-like pains in the left lower quadrant often associated with gas and cramp-like pains of a mild character. After about two or three months, during which time she was on a low residue diet, this condition cleared up. Six months before entry she developed grippe following which she did not seem to gain strength. Three months later she had another attack of grippe during which she had two acute attacks of cramp-like abdominal pain. One month before admission, following x-rays of her gastro-intestinal tract, she began to have intense gas pains across her lower abdomen which at times doubled her up. She was given enemas and saline irrigations two or three times a day, but at times she did not require enemas for bowel movements. However, she was forced to eat only a light diet in order to prevent the abdominal pain. Two days before entry she had very severe abdominal pain which was not relieved by enemas. The following day she vomited for the first time and since then had vomited several times. During the past month she had blood-stained stools on several occasions, but no tarry or clay-colored stools were noticed. She had had hemorrhoids for the past twenty years and occasionally had a trace of blood in her stools. During the past five weeks she ran a slight fever and lost about five pounds in weight.

Her family and marital histories are non-contributory.

She had the usual childhood diseases. Twenty-two years before entry she had what was called gallbladder pain, described as severe epigastric pain, for three or four days followed by jaundice. Since then she had two or three similar but less severe attacks. She had not been jaundiced since her first attack.

Physical examination showed a drowsy middle-aged woman lying in bed and complaining of a sense of fullness in the abdomen. The skin was dry. The heart and lungs were negative. The abdomen showed rather marked distention and tympany. There was some dullness in the flanks but no fluid wave. In the left hypochondrium there was a sense of resistance and a suggestion of a mass, although this could not be outlined or felt distinctly. It was not tender to pressure. No organs were palpable.

The temperature was 98.6°, the pulse 85. The respirations were 20.

Examination of the urine showed a specific gravity of 1.012 with a slight trace of albumin and an occasional white blood cell. Examination of the blood showed a red cell count of 3,890,000, with a hemoglobin of 70 per cent. There was a white cell count of 18,300, 76 per cent polymorphonuclears. Of two stool examinations one showed a positive guaiac test. The non-protein nitrogen of the blood was 23 milligrams. A Hinton test was negative.

A barium enema passed slowly from the rectum to the splenic flexure where it met an almost complete obstruction. The latter was apparently due to an annular irregular constriction about six centimeters in length which reduced the lumen of the intestines to one centimeter. There was a moderate amount of gas and feces proximal to the obstruction in the colon. It was thought that there were pressure defects on the rectum and sigmoid.

On the fourth day a cecostomy was performed. In spite of the fact that her chart remained fairly flat she complained of abdominal pain and distention. She steadily went downhill and died one month after admission.

Differential Diagnosis

Dr. Herbert D. Adams: This patient's history, clinical findings and course are quite typical of large bowel obstruction. This woman, going into the sixth decade of life, for the past year has had intermittent attacks of cramp-like lower abdominal pain associated with distention.

These were mild in the beginning and relieved by a low residue diet. Two of these attacks followed upper respiratory infections which may be explained by a lowered resistance, inactivity, and disturbed bowel function during these illnesses precipitating intermittent obstruction at the site of an already partially obstructing lesion. It is also characteristic that her next attack, and a more severe one, followed gastro-intestinal x-rays during which she probably received barium by mouth, causing a more complete obstruction. Her bowels became progressively more constipated and she was forced to restrict her diet more and more to prevent pain. Her stools had been blood stained, and although such a symptom can be explained on the basis of long-standing hemorrhoids, it would be a serious mistake to do so. Two days before entry she became completely obstructed, with severe abdominal cramps, obstipation, and vomiting. There had been a steady loss of weight and strength.

Her past history is interesting because she had had a number of attacks of upper abdominal pain quite characteristic of cholelithiasis

and the passage of stones into the duodenum, one attack being very severe and definitely associated with jaundice. With this sort of history one should always remember the possibility of gall-stone intestinal obstruction. However, the obstruction of this case has been an intermittent, slowly progressive one, influenced by such factors as illness and the ingestion of barium; and the location of the pain in the lower abdomen and the blood-stained stools, all point strongly toward a gradually constricting carcinoma of the large bowel.

The physical examination, the secondary anemia and the guaiac positive stools are all confirmatory. Finally, barium enema showed an irregular constriction localizing the lesion at the splenic flexure.

The other condition which occasionally gives this picture of large bowel obstruction is the inflammatory obstructing lesion associated with diverticulitis. In this condition there is usually, however, more evidence of an extensive inflammatory process and local abscess formation. It is more often seen in the sigmoid, and the barium enema gives some evidence of diverticulitis.

A cecostomy was performed but she continued to have abdominal pain and distention, went steadily downhill and died one month after admission. No mention was made of how well the cecostomy functioned but one can surmise that it functioned poorly because of the persistence of her symptoms. This fact and her course after operation would indicate an extension to other parts of the gastro-intestinal tract with other more proximal points of obstruction or a generalized carcinomatosis, probably both.

Clinical Diagnosis

Carcinoma of colon, splenic flexure.

Dr. Herbert D. Adams' Diagnoses

Carcinoma of the splenic flexure.
Carcinomatosis.

Anatomic Diagnoses

Carcinoma of the transverse colon with diffuse peritoneal metastases.
Ascites.
Hydrothorax, bilateral.
Atelectasis, left lower lobe.
Operative wound: Cecostomy.

Pathologic Discussion

This patient's condition seemed too poor at the time of entry to warrant radical surgery. Dr. Faxon, therefore, went into the right lower quadrant with the intention of doing only a cecostomy to relieve the obstruction, hoping if she improved enough and the tumor was not too extensive to operate again at a later date on the tumor itself. As soon as the abdomen was opened, however, widespread metastases were found in the mesentery. One of these was biopsied and showed histologically adenocarcinoma.

At the time of autopsy the carcinoma had spread throughout the abdominal cavity, every serous surface being studded with minute metastases. The ascitic fluid was frankly bloody, as is often the case in carcinomatous peritonitis. Numerous larger metastases, from one to two centimeters in diameter, were found in the liver, and the left ovary was completely replaced by a large mass of tumor tissue eleven centimeters in diameter.

The primary tumor in the sigmoid was a typical, annular, constricting lesion which had reduced the lumen to barely a centimeter in diameter. Microscopically it proved to be a fairly well differentiated adenocarcinoma which was forming enough mucin to warrant its classification as a colloid carcinoma. The ovarian mass showed an entirely similar histologic picture and was unquestionably a metastasis, not a second primary tumor.

Some of the intrahepatic metastases had evidently obstructed some of the smaller bile ducts since focal bile stasis was present in several areas. Evidently enough liver was uninvolved, however, to prevent hepatic insufficiency.

As a terminal event a bilateral hydrothorax had developed with a collapse of most of the lower lobe of the left lung. There were no pleural metastases.

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GOVERNOR CURLEY'S INAUGURAL ADDRESS

ON January third Governor Curley delivered his inaugural address at the Massachusetts State House before a large and enthusiastic audience. The address as a whole was thoroughly in keeping with his vigor and breadth of vision. It is particularly appealing to the medical profession that he should have expressed so plainly his views regarding the importance of adequate public health legislation, and the need for the maintenance of essential services for the prevention of diseases. He said to the members of the Legislature in this connection: "The Commonwealth of Massachusetts has always maintained an enlightened interest in matters pertaining to the health of its citizens. It has been expedient from time to time to establish and maintain essential service, and to enact or amend laws for enlarging the scope of those departments created for the prevention of disease, since they affect the very lives of our people, and should be administered with the highest possible degree of efficiency. I have received assurance that in the event of the appointment of a commission for the study and revision of public health laws of the Commonwealth, a national foundation interested in public health will defray the expenses of the commission, and subject to favorable action by your honorable body I shall appoint a commission."

Governor Curley's interest and progressive attitude toward improving the health of the citizens of Boston has been already clearly demonstrated in many ways during his tenure of office as Mayor. No city in America has made more public health progress during the past twenty years than Boston. During twelve of these years, Mr. Curley served as Mayor. The development and the maintenance of the health units, the organization of a sound child health program, the reduction of tuberculosis, the extension of the dental service, the furtherance of the control of communicable disease, and the promotion of health education are but some of the activities of the department of health which received his undivided support and backing. It is gratifying, indeed, to the people and particularly to the doctors of Massachusetts to know that in his higher office Governor Curley has in mind a statewide effort to continue to safeguard the well-being and to protect the health of the people of the Commonwealth.

TO THE FELLOWS OF THE MASSACHUSETTS MEDICAL SOCIETY

EXTENSIVE plans are being worked out to make the next annual meeting of the Massachusetts Medical Society in Boston, during June 1935, the most successful on record. Each individual fellow of the State Society is urged by the Committee of Arrangements to set aside June 3, 4, and 5 so that everyone may take an active interest in that meeting. Medical and surgical subjects, which are of interest particularly to the general practitioner, will be thoroughly covered by the speakers. Active participation in the discussion of these subjects is urged on the fellows of the Society for the purpose of having an enthusiastic and instructive meeting, thereby promoting valuable information for all concerned.

Members are strongly urged to plan to come to our meeting with their wives, and accept Boston's hospitality, at the same time attending a part, if not all, of the medical meetings. Golf, sight-seeing and other features have been arranged by special sub-committees working to afford the fellows and their wives or families a most enjoyable occasion.

The success of this meeting depends on your coöperation and active interest in your organization.

Let us make this coming annual event the most successful in the history of our Society!

THE BILL TO SECURE JUSTICE FOR DOCTORS AND HOSPITALS

ANOTHER effort is to be made this winter to induce the legislature of Massachusetts to enact a bill which will safeguard the doctors and hospitals who are called to treat accident cases which do not come under the provisions of the law relating to industrial accidents.

It is often found that doctors and hospitals are called upon to treat persons injured in automobile accidents and sometimes such cases are settled by lawyers or directly to the injured person, the doctor and the hospital not being recognized.

Dr. Miles of Brockton, a member of the Senate, tried valiantly last year to have a bill enacted which would cover such claims, but without success. His experience has led to the presentation of a bill which is modeled in conformity with that of New Jersey, merits careful consideration by the Committee on State and National Legislation of the Massachusetts Medical Society, and seems to deserve support.

As set forth in Dr. Miles' appeal to the medical profession, the physicians of the State should attend the hearings and show an enthusiastic support of Senator Miles' effort in their behalf.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

O'MEARA, JOHN W. A.B., M.D. Harvard University Medical School 1918. F.A.C.S. Senior Orthopedic Surgeon, Worcester City Hospital. Orthopedic Surgeon, St. Vincent Hospital. Consultant in Orthopedic Surgery, Clinton Hospital and Worcester State Hospital. His subject is "Fractures of the Femoral Neck Treated by Blind Nailing." Page 43. Address: 390 Main Street, Worcester, Mass.

MULLIN, WILLIAM V. M.D. University of Denver School of Medicine 1908. F.A.C.S. Head of Department of Otolaryngology, Cleveland Clinic. His subject is "The Present Status of Infection of the Upper Respiratory Tract in Its Relation to Focal Infection." Page 50. Address: Cleveland Clinic, Cleveland, Ohio.

COATES, GEORGE MORRISON. A.B., M.D. University of Pennsylvania School of Medicine 1897. F.A.C.S. Professor of Otorhinology, Graduate School of Medicine, University of Pennsylvania. Professor of Otolaryngology, University of Pennsylvania. Attending Otolaryngologist to Abington and Presbyterian Hospitals. Consulting Otolaryngologist, Chester County Hospital, West Chester. Consulting Otolaryngologist, Veterans Administration. Secretary, American Laryngological Association from 1920 to 1933. President in 1933. His subject is "The Diagnosis of Chronic Infection of the Tonsils in Relation to Indications for Operation in Cases of Chronic Focal Infection." Page 52. Address: 1721 Pine Street, Philadelphia, Pa.

CHRISTIAN, HENRY A. A.M., LL.D., Sc.D., M.D. Johns Hopkins University School of Medicine 1900. Physician-in-Chief, Peter Bent Brigham Hospital, Boston. Hersey Professor of the Theory and Practice of Physic, Harvard Medical School. His subject is "James Jackson (1815) and Digitalis." Page 54. Address: Peter Bent Brigham Hospital, Boston.

SOLOMON, PHILIP. B.S., M.D. Harvard University Medical School 1930. Instructor in Neurology and Austin Teaching Fellow, Harvard Medical School. Junior Visiting Neurologist, Boston City Hospital. His subject is "The Diagnosis in Spinal Fluid Contaminated by Blood: The 'Bloody Tap'." Page 55. Address: 70 Fenway, Boston.

BALCH, FRANKLIN G., JR. A.B., M.D. Harvard University Medical School 1923. F.A.C.S. Assistant in Surgery, Harvard University Medical School. Assistant Surgeon to Out-Patients, Massachusetts General Hospital. Assistant Surgeon Faulkner and Collis P. Huntington Memorial Hospitals. His subject is "The Injection Treatment of Internal Hemorrhoids." Page 57. Address: 279 Clarendon Street, Boston.

SUTHERLAND, JOHN P. Sc.D., M.D. Boston University School of Medicine 1879. Dean Emeritus, Boston University School of Medicine. Formerly, Professor of Anatomy, Boston University School of Medicine. Professor of Theory and Practice, Boston University School of Medicine 1917 to date. His subject is "Malnutrition: The Medical Octopus." Page 60. Address: 295 Commonwealth Avenue, Boston.

MASSACHUSETTS LEGISLATIVE NOTES

THE BILL REFERRED TO IN THE LETTER OF DR. CHARLES G. MILES, MEMBER OF THE SENATE

An Act providing security to Hospitals and Physicians in the Enforcement of Reasonable Charges for Treatment of Certain Personal Injury Cases.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Chapter two hundred and fifty-five of the General Laws is hereby amended by adding at

the end, under the heading, *Liens of Hospitals and Physicians*, the following six new sections:

Section 40. Every registered physician, and every person maintaining within the commonwealth a hospital other than one maintained by the commonwealth or a political subdivision thereof, shall have a lien upon any and all rights of action, suits, claims, counterclaims or demands which any person treated by such physician, or admitted to such hospital and receiving treatment, care and/or maintenance therein, on account of personal injuries received by him as the result of the wrongful or negligent act or failure to act of any person, may have, assert and/or claim against such last-named person, such lien to be for all reasonable charges of such physician for medical and/or surgical treatment, or for all reasonable expenses and charges of such hospital, at ward rates, as the case may be, for such treatment, care and/or maintenance of such injured person up to and including the date of payment of damages for such injury; provided that a written statement containing the name and address of the injured person, if known, the date upon which his injuries were sustained, the name of the physician, or of the hospital or of the person maintaining the same, as the case may be, and his or its location or address, and, if known, the name and address of each person alleged to be liable to pay damages to such injured person for such injuries shall be filed in the office of the clerk of the courts (in Suffolk County in the office of the clerk of the superior court for civil business) and of the county wherein such injuries were sustained, prior to the payment of such damages; and provided, further, that such physician, or such hospital or the person maintaining it, shall immediately upon filing such written statement mail, postage prepaid, a copy of such statement, with a record of the date and place of filing thereof endorsed thereon, to each person so alleged to be liable to pay damages whose name and address are known to the lien claimant. The claim of a registered physician made under authority of this section may be included in, and made a part of, the claim of a hospital hereunder.

Section 41. The reasonable charges for which a lien under the preceding section may be claimed by a registered physician shall not exceed the charges specified for the services performed in the schedule of charges established for the county within which the lien is claimed by the Massachusetts Medical Society, which is hereby authorized forthwith to establish such a schedule for each county within the commonwealth, and shall file promptly a copy thereof, and of all subsequent charges, amendments and additions therein and thereto, in the office of the clerk of the courts (in Suffolk County in the office of the clerk of the superior court for civil business) of the county wherein such schedule is, or is to be, effective. Before any such schedule, or any change, amendment or addition therein or thereto, shall become effective, a public hearing thereon shall be held by a judge of the superior court sitting within and for such county, public notice of the time and place of which hearing shall be given by publishing the same at least thirty days before such date in a newspaper having a general circulation in such county. If, after such hearing, the judge shall be satisfied of the reasonableness and sufficiency of such charges or of such change, amendment or addition therein or thereto, he shall issue an order to such effect and file the same with the clerk; and thereafter in any proceeding in such county to enforce a lien established under section 40, such schedule may be introduced as evidence of the reasonable value of the services so performed, but in no event shall any lien be enforced for any charge in excess of such schedule.

Section 42. Any lien referred to in section 40 shall attach to any verdict, report, decision, degree, award or final judgment or order made or rendered in any action or proceeding in any court of the commonwealth, or by any board or commission thereof, in any suit, action or other proceeding brought by such injured person, or by his estate in case of his death, against any person for the recovery of damages on account of such injuries, as well as to the proceeds of any settlement of any such suit or of the settlement of any such claim or demand effected by any such injured person with such other person.

Section 43. After the filing of the notice as provided by section 41 no release of any judgment, claim or demand by such injured person shall be valid or effectual as against such lien, and any person making any payment of damages to such injured person or to his legal representative for injuries sustained, or for death caused by such injuries, shall for one year from the date of such payment remain liable to the lien claimant for the amount of his or its reasonable charges due at the time of such payment to the full extent of the services and expenses to the date of such payment, and any such lien claimant may within such period enforce his or its lien by a suit at law against the person making such payment of damages.

Section 44. The clerk of the courts of each county (in Suffolk County the clerk of the superior court for civil business) shall at the expense of his county provide a proper docket, to be called the physician and hospital lien docket, in which, upon the filing of any lien claim under section 41, he shall enter the name of the injured person, the date of the accident and the name of the registered physician, or of the hospital or person maintaining the same making the claim. Such clerk shall also prepare and keep up to date a proper index of said docket, and shall be entitled to the following fees:

For filing such claim , and at the rate of cents per-folio for each entry made in the lien docket and cents for each search made by him in his office for a lien claim.

Section 45. Any person against whom a claim for compensation for injuries suffered by a person re-

ferred to in section 40 shall be made may examine the records relative to the treatment, care and/or maintenance of such injured person made or kept by the lien claimant.

H. 59 reads as follows:

To the General Court of Massachusetts.

In compliance with General Laws, chapter 30, section 33, I have the honor to submit herewith such portions of my annual report for the year 1934 (Pub. Doc. No. 34) as embody recommendations for legislation, accompanied by a draft of bills to cover such recommendations.

Vaccination of Children in Private Schools.

(1) The general laws at present require smallpox vaccination of children as a prerequisite to public school attendance. While this has been effective in keeping the incidence of the disease at a figure lower than that of any other State in the Union, this protection to the community has come from the enforcement of this provision upon those who could not afford to go to a private school. This means, then, that those financially able to attend a private school can purchase their protection at the expense of those less favorably situated. The proposed amendment in extending the compulsory vaccination to include private schools would provide for equal participation on the part of all, thus avoiding any suggestion of what may well be called at present class legislation. In addition, it would prevent the occasional case of smallpox that occurs from time to time among children who have evaded or escaped vaccination through private school attendance.

Treatment by Cities and Towns of Indigent Persons Suffering from Gonorrhea or Syphilis; and Divulging of Hospital, Dispensary, Laboratory or Morbidity Reports and Records Pertaining to Gonorrhea or Syphilis.

The wisdom of the following modifications of existing statutes pertaining to gonorrhea or syphilis is self-evident. They aim—

(2) To remove any doubt as to local responsibility for furnishing treatment to infected indigents for the good of the individuals and the protection of the public.

(3) To remove any possible restraint from a physician who believes it advisable to give information necessary for self-protection to the husband or wife of an infected person under his care.

The words "gonorrhea or syphilis" are substituted for the words "venereal diseases" for the sake of conformity with the statutes. Gonorrhea and syphilis have been declared diseases dangerous to the public health, but venereal diseases have not been defined either by the Legislature or the State Department of Public Health.

Very truly yours,

HENRY D. CHADWICK, M.D.,
Commissioner of Public Health.

H. 60 is an act requiring the vaccination of children in private schools and reads as follows:

Section fifteen of chapter seventy-six of the General Laws is hereby amended by inserting after the word "public," in the first line, the words:—or private, — so as to read as follows: — *Section 15.* An unvaccinated child shall not be admitted to a public or private school except upon presentation of a certificate like the physician's certificate required by section one hundred and eighty-three of chapter one hundred and eleven. A child from a household where a person is ill with smallpox, diphtheria, scarlet fever, measles, or any other infectious or contagious disease, or from a household exposed to contagion from any such disease in another household, shall not attend any public school during such illness or exposure until the teacher of the school has been furnished with a certificate from the local board of health, or from the attending physician, stating that the danger of conveying such disease by such child has passed.

H. 61 is an act relative to treatment by cities and towns of indigent persons suffering from gonorrhea or syphilis and reads as follows:

Section one hundred and seventeen of chapter one hundred and eleven of the General Laws is hereby amended by inserting after the word "city" in the first line the words:—or town,—and deleting the word "contagious" in the second line and the words "or infectious" in the third line,—and by substituting the words: — gonorrhea or syphilis, — for the words "venereal diseases" in the third line,—so as to read as follows:—*Section 117.* Each city or town shall provide for treatment, either in a hospital or as out-patients, of indigent persons suffering from gonorrhea or syphilis.

S. 17 is an act providing for increased compensation in certain industrial accident cases and reads as follows:

SECTION 1. Section thirty-four of chapter one hundred and fifty-two of the General Laws, as appearing in the Tercentenary edition, is hereby amended by striking out, in the fourth line, the word "eighteen" and inserting in place thereof the word:—twenty-one,—and by striking out, in the fourth and sixth lines, respectively, the word "nine" and inserting in place thereof, in each instance, the word:—twelve,—so as to read as follows: *Section 34.* While the incapacity for work resulting from the injury is total, the insurer shall pay the injured employee a weekly compensation equal to two-thirds of his average weekly wages but not more than twenty-one dollars nor less than twelve dollars a week, except that the weekly compensation of the injured employee shall be equal to his average weekly wages in case such wages are less than twelve dollars; and the period covered by such compensation shall not be greater than five hundred weeks nor the amount more than forty-five hundred dollars.

SECTION 2 and section thirty-five of said chapter one hundred and fifty-two, as so appearing, is here-

by amended by striking out, in the fifth line, the word "eighteen" and inserting in place thereof the word: — twenty-one, — so as to read as follows: *Section 35.* While the incapacity for work resulting from the injury is partial, the insurer shall pay the injured employee a weekly compensation equal to two-thirds of the difference between his average weekly wages before the injury and the average weekly wages which he is able to earn thereafter, but not more than twenty-one dollars a week; and the amount of such compensation shall not be more than forty-five hundred dollars.

H. 50. Section 1 provides that the Gardner state colony is hereby made a state hospital, under the name of the Gardner state hospital, for the care and treatment of the insane, and shall be subject to all provisions of general law applicable to such hospitals.

SECTION 2. Section five of chapter nineteen of the General Laws, as appearing in the Tercentenary edition, is hereby amended by striking out, in the fourth line, the word "colony" and inserting in place thereof the word: hospital, so as to read as follows: *Section 5.* The boards of trustees of the following public institutions shall serve in the department: Belchertown state school, Boston psychopathic hospital, Boston state hospital, Danvers state hospital, Foxborough state hospital, Gardner state hospital, Grafton state hospital, Walter E. Fernald state school, Medfield state hospital, Metropolitan state hospital, Monson state hospital, Northampton state hospital, Taunton state hospital, Westborough state hospital, Worcester state hospital and Wrentham state school.

SECTION 3. Section twenty-five of chapter one hundred and twenty-three of the General Laws, as so appearing, is hereby amended by striking out, in the fifth line, the word "colony" and inserting in place thereof the word:—hospital,— so as to read as follows:—

SECTION 25. The state institutions under the control of the department shall be Worcester state hospital, Taunton state hospital, Northampton state hospital, Danvers state hospital, Grafton state hospital, Westborough state hospital, Foxborough state hospital, Medfield state hospital, Monson state hospital, Gardner state hospital, Wrentham state school, Boston state hospital, Walter E. Fernald state school, Boston psychopathic hospital, Belchertown state school, Metropolitan state hospital, and such others as may hereafter be added by authority of law.

SECTION 4 of said chapter one hundred and twenty-three is hereby further amended by incorporating Section 50. *Section 50.* A justice of the superior court, in any county, and any of the judges of probate for Suffolk county, the judge of probate for Nantucket county, or a justice or special justice of a district court, except the municipal court of the city of Boston, within his county, may commit to any institution for the insane, designated under or described in section ten, any insane person, then residing or being in said county, who in his opinion is a proper subject for its treatment or custody.

Section seventy-seven of said chapter one hundred and twenty-three is amended by Section 5.

If a person is found by two physicians qualified as provided in section fifty-three to be in such mental condition that his commitment to an institution for the insane is necessary for his proper care or observation, he may be committed by any judge mentioned in section fifty, to a state hospital, to the McLean hospital, or, in case such person is eligible for admission, to an institution established and maintained by the United States government, the person having charge of which is licensed under section thirty-four A, for a period of thirty-five days pending the determination of his insanity.

SECTION 6. Section seventy-eight of said chapter one hundred and twenty-three is amended by Section 6 as follows:

The superintendent or manager of any institution for the insane may without the order of a judge required by sections fifty and fifty-one receive into his custody and detain in such institution for not more than five days any person whose case is certified to be one of violent and dangerous insanity or of other emergency by two physicians qualified as provided in section fifty-three by a certificate conforming in all respects to said section, which certificate may be filed with a judge, as the certificate required by section fifty-one.

SECTION 7 is amended as follows:

The superintendent or manager of any institution for the insane may, when requested by a physician, member of the board of health, sheriff, deputy sheriff, member of the state police, selectmen, police officer of a town or by an agent of the institutions department of Boston, receive and care for in such institution as a patient, for a period not exceeding ten days, any person needing immediate care and treatment because of mental derangement other than delirium tremens or drunkenness.

Section eighty-six of said chapter one hundred and twenty-three, as so appearing, is hereby amended in Section 8 by striking out, in the fourth and fifth lines, the words "in the case of Gardner state colony when so authorized by the department," so as to read as follows: *Section 86.* The trustees, superintendent or manager of any institution to which an insane person, a dipsomaniac, an inebriate, or one addicted to the intemperate use of narcotics or stimulants may be committed, may receive and detain therein as a boarder and patient any person who is desirous of submitting himself to treatment, and who makes written application therefor and is mentally competent to make the application; and any such person who desires so to submit himself for treatment may make such written application. No such person shall be detained more than three days after having given written notice of his intention or desire to leave the institution.

BOSTON EMERGENCY CAMPAIGN OF 1935

Another Boston Emergency Campaign starts January 14, 1935. The success of the campaign will depend upon how well it is supported by all classes of society. The attitude of the medical profession will be most important because of the unique position which it holds in the community. No other group of men come into such close personal relationships with all classes. The attitude of the doctor must influence the ideas of his patients. Since the success or failure of the campaign this year is of vital interest to the medical profession, the individual doctor, and the whole community, — each physician should acquaint himself with present conditions, and the object of the campaign.

The object of the campaign is to obtain the necessary financial support for those institutions which are not receiving adequate funds. It is not generally understood that federal relief is doing little or nothing for the support of private institutions. The object of government aid has been the relief of the destitute by supplying them with work and the stimulation of recovery from the depression by putting more money into circulation. Little or none of the many billions of dollars which one reads about over his breakfast coffee is going toward such institutions as hospitals, schools, and the various charitable organizations which are a necessary part of our community life. In the past these institutions have been organized and supported by private donations. With the decrease in incomes, donations have necessarily decreased to a point where the usefulness of these organizations are much curtailed and where in many instances it is only a question of time when they will cease to function.

Conversations with numerous physicians indicate that many either do not understand the true situation or have not thought to what results the present condition may lead. The physicians who have expressed a lack of interest or an antipathy to the campaign have given one of three reasons:

1. It is foolish to donate money at a time when one anticipates a very definite increase in taxes.
2. The campaign may help the hospital and other charities but will be of no personal help to the physician.
3. The general practitioner would be better off with some form of state medicine which would guarantee him a fixed salary.

Let us consider whether these reasons are well taken. It is true that in the past a person was better able to know what his coming expenses would be and how much of his income could be given to charity. Now with a smaller or perhaps decreasing income he does not know how much larger his taxes will be. He does not feel obligated to give more than his just share. But there is also another side to the picture. If our institutions do not receive adequate financial support by private donations, they must cease to exist or will be taken over by the government. In turn, government support will increase our taxes.

A moment's thought will convince one that our institutions which have developed under the benevolent influence of charity now form an integral part of our community life and will not be allowed to perish. The layman criticizes the hospital not because he wants it to be done away with, but because he wants it to give him more than it is doing. Institutions of this kind will therefore persist. But many persons do not stop to think that the existence of most hospitals has depended upon the support of a few generous and public-spirited persons.

It is not generally known how near many of these institutions have come to the breaking point from the necessary drying up of the sources of former financial support. Private endowments and annual donations represent the greater part of hospital incomes. No hospital expects to charge the ward patient more than is necessary to meet expenses, and a large proportion of these do not pay their share of the cost of service. The case of the Peter Bent Brigham Hospital may be cited as an example of what is occurring in many of these institutions. In order for the hospital to break even in normal times it has to charge the ward patient $24.00 per week. In 1933 the cost of caring for this patient was $45.43 per week and the difference of $21.43 was taken care of by the hospital's endowment. During the last eleven months, however, sixty-one per cent of the ward patients paid nothing or only a small part of the regular charge.

Meanwhile the income from the endowment has decreased with the result that the hospital is incurring an annual deficit of around $100,000 a year. Every kind of economy has been instituted and any further slash in expense will mean a severe reduction in the efficiency and quality of service rendered.

On the other hand, if the hospital continues to cut into its capital funds it will ultimately have to close. From this it is evident that the plight of those hospitals with little or no endowment must be acute. Already there are a number of charitable hospitals in Boston in which it is almost impossible to obtain admittance for free patients.

The time has passed when one can consider government support for these institutions an academic problem. A decision must be made in the near future, otherwise government support will be a fact and not a question. There is little comfort in this for the man who fears increasing taxation. Institutional care by the government will mean increased taxes for many years to come. One is faced with the alternative of increasing one's largess for a year or two until the crisis is weathered or committing oneself to a policy of larger taxes, the end of which no one can see.

Much of what has just been said can be used against the argument of the doctor who thinks that aid for the hospitals will be of no benefit to him. Many of these men believe that the hospitals are one cause for their troubles. They complain that the hospitals treat patients who could pay for private care; that many patients who have been referred to the hospitals for special studies have not been returned to them; and that hospitals supply treatment at costs which compete unfairly with practicing physicians. Although there may be some justification for these complaints, let us look at the matter from a broader point of view, otherwise we may tend to magnify our injustices and to ignore or minimize the advantages that accrue to us.

Hospitals provide certain advantages to the general practitioner. They take into their wards very sick patients who cannot afford to pay the doctor. Happy should be the doctor who has had no patients suffering from a severe illness with no money to pay his physician. It is a cause of relief to know that when his situation arises there is a hospital to which the patient may be sent and thus save many weary calls with no hope of any monetary return.

The service which hospitals perform in the way of cheap x-ray and metabolic examinations, not to mention many other tests, is of inestimable value to many physicians. These are examinations that are now essential in the practice of medicine. The hospitals supply a helpful service to those individuals who have not the technical training or the time to perform these tests in their offices. One must not forget that many of these services are frequently supplied at cost or at times below cost. Hence, it is apparent that the physician who analyzes his past experiences will find that the hospitals provide him with indispensable help. The growth of hospitals has been rapid through the last twenty years as the result of the development of laboratory apparatus requiring large capital outlays and trained technicians. This rapid growth has raised new problems in medicine which must be solved. But their solution will come more easily and satisfactorily if it is worked out by the medical profession than if the problem is turned over to the government for solution. Although the general practitioner may feel at times that the present heads of hospitals are somewhat autocratic and are more interested in the hospitals than the profession at large, is there any reason to believe that conditions will be better if the profession is administered by a group of government employees? The doubts of any physician on this score may be easily dispelled by consulting his local postman. Government's greatest interest lies in the greatest number of persons and in this instance the doctors will represent the minority. Hence, the interests of the profession as well as the general public will be served better if the hospitals continue to subsist on private donations.

Those who disapprove of the campaign on the grounds that it will be better to have state medicine have two main arguments:

1. That state medicine will give the public better service than the present system.

2. That it will provide the doctor with a more satisfactory life.

The burden of proof lies upon these individuals to show how the government can improve the quality of service. It is hard to understand how or why physicians will be able to organize their services better if they are working for the government than if they are working for themselves. All experience has pointed the other way. It is more difficult to answer the claim that it will provide the physician with a more satisfactory life, because those who advance this argument are the ones who for one cause or another are in financial straits. To them a more satisfactory life means freedom from financial worry. Unfortunately there are to-day a large number of physicians who are either without funds or to whom the future appears entirely uncertain.

But with all sympathy for their present plight, they may be asked to balance very carefully the advantages and disadvantages of the remedy which they advocate. It is a natural impulse for the discouraged one to look for new avenues of escape, but we must remember that present conditions are unusual and will not last indefinitely. What will the physician lose in order to gain temporary financial security? Doctors are individualists above everything else. The three impulses which are most responsible for drawing young men into medicine are the desire to be one's own master, the independent relationship which exists between physician and patient, and the wish to aid others in distress. The medical profession has so far been able to maintain its independence. There is no group of individuals with the possible exception of farmers which has more control over its own destiny. But the freedom and independence of the physician are largely lost if he is told what medicines to prescribe, how many patients he can see, or if he is required to report the reasons for his treatment to a superior. State medicine will ultimately lead to all these requirements whether we like it or not.

The relationship between doctor and patient means much more to us than we sometimes realize. Where else can one find such trust as the layman places in the medical profession? This trust is based on a code of ethics which is the heritage of medicine. Starting with the oath of Hippocrates, it is to the glory of the profession that it has kept to the faith so well. But the strength of ethics is maintained by necessity. Ethics are always higher in a simple than in a complicated community because their need is more apparent. So long as medicine remains a guild or profession, its traditions will remain intact. Make it a government agency and the individual's responsibility will become less evident, the importance of the Hippocratic code will seem less clear, and gradually the layman's trust is sure to dissipate.

If we remove the physician's individuality and his

sense of responsibility to his fellow person, will there be much in medicine to interest him even though he is assured of $3,000 a year? It is doubtful. Before turning to the government for help we should make a serious effort to solve our problems through our local medical societies.

It may be hoped that from what has been written it becomes evident that this is a critical time for the medical profession. If after due consideration we want the best in medicine to be continued, we must use our efforts to support it as we can.

Support the Boston Emergency Campaign financially so far as possible. At all events support it in spirit. The profession can do much in educating the laity about the purposes and need for the campaign. Make clear what the real condition of our hospitals is and the services they perform to every member of the community. Make clear also what state medicine will mean to individuals as patients.

Point out further that with the leveling of large incomes, smaller incomes must bear the brunt of what the wealthy formerly did. This is something which the community must learn sooner or later. Get these facts across to your patients and you will do a service to yourself, the community, and the nation.

E. S. EMERY, JR.

CORRESPONDENCE

A BILL FOR THE PROTECTION OF DOCTORS AND HOSPITALS

The Commonwealth of Massachusetts
Senate Chamber, Boston
December 26, 1934.

Editor, *New England Journal of Medicine*,

I am sending you a copy of the Lien Law* that I am planning to introduce to aid the Physicians and Hospitals of the State of Massachusetts, this coming session of the Legislature. This law is similar to one that has been recently passed by the State of New Jersey and was signed by the Governor of that State on April 30, 1934, so you may see that this is of very recent origin. It is much stronger than the Ohio law and the laws of other states. I believe that there are now eight states in the Union that have lien laws to aid Physicians and Hospitals to collect their money due as the result of accident cases. This means not only automobile accidents, but all cases arising from accidents. I have sent a copy to Dr. Thomas J. O'Brien in order that he may look it over. It is unnecessary for me to tell you that we must "stir up the drones" now connected with the medical profession of Massachusetts, who are practicing the profession in our State and sit back and criticize the person who is trying to do something for them. I think it is about time those fellows got busy and did something for themselves. By helping themselves they would help the profession.

It was positively disgusting last year to see what the reaction was to the bill that I tried to put through to aid the Medical Profession. I came very near getting it through, too. I failed by only one vote to substitute an adverse report that was sent in by the Judiciary Committee. A good many of these men claimed to be too busy but that good old scout, Dr. Halbert Stetson, wasn't too busy to come all the way from Greenfield to that hearing and numerous other men like him came from long distances to appear at the hearing and talk in favor of the bill while many physicians in the city of Boston, where the hearing was held at the State House, were sitting in easy chairs letting someone do their work for them. This will be positively the last time that I will initiate anything for the medical profession, while I am in the State House, if I don't get a decent response to my efforts to help the medical profession of Massachusetts. It becomes rather tiresome to do all this hard work and those men who need the law most sit back in their offices and criticize the men who are trying to do something for them.

However, I deeply appreciate those physicians and surgeons who did take the time to go in to that hearing. I was told that it was the largest hearing that had been held in favor of the doctor and his problems, for years at the State House. There were about 200 there. I wanted at least 1000 present and hope to get that many this year. The physician or surgeon who takes an arrogant, mean and despicable attitude and does not appear at the hearing of a bill like this that has only one objective, to help the whole profession, is like "the dog who bites the hand that feeds him," if he stays away and doesn't do anything to help himself. He has no business in the profession at all and should be read out of the society for all the good he does to help himself and his brother practitioners who need the help so badly. He is the person who gets "gyped" out of his money in these automobile accident insurance cases, as well as the hospitals.

Very sincerely,

CHARLES G. MILES,
Chairman, Committee on Education.

*See page 75 of this issue.

MODIFICATIONS IN ASSAY FOR ERGOT

December 31, 1934.

To the Editor:

A NEW U.S.P. X INTERIM REVISION OF THE ERGOT ASSAY

I enclose an announcement of the Pharmacopoeial Interim Revision No. 3. This announcement primarily covers modifications in the assay for Ergot and the Fluidextract of Ergot and replaces Interim Revision No. 1.

The first Interim Revision of the Tenth Revision

of the Pharmacopoeia became official on January 1, 1934, and made certain changes in the assay of ergot and its fluidextract, also a modification of the manufacturing method for the fluidextract of ergot. In the first revision, the standard for ergot remained as in the original text, namely, a fluid preparation of ergot.

Since then, however, as a result of further investigation, it has been found desirable to adopt the alkaloidal salt, ergotoxine ethanesulfonate, as the official ergot standard.

For the purpose of insuring uniformity in the ergotoxine ethanesulfonate to be used as the official ergot standard, the U.S.P. Board of Trustees have arranged for the packaging in ampuls, under nitrogen, of a carefully standardized lot of this alkaloidal salt. This Ergot standard may be obtained through the office of the Chairman of the U.S.P. Committee of Revision, 43d Street and Woodland Avenue, Philadelphia, Pa.

By this new revision (No. 3) ergot will be required to possess a potency, per gram, equivalent to not less than that of 0.5 milligram of the official standard and the fluidextract must be adjusted to possess a potency, per cubic centimeter, equivalent to that of not less than 0.4 milligram and not more than 0.65 milligram of the standard ergotoxine ethanesulfonate.

The new monographs for Ergot and Fluidextract of Ergot released in Interim Revision No. 3 on January 1, 1935, will become official and enforceable on May 1, 1935. Anyone desiring a copy of this "Interim Revision Announcement No. 3" may obtain it by addressing the Chairman, E. Fullerton Cook, 43d Street and Woodland Avenue, Philadelphia, accompanying their request with *ten cents in stamps* to cover printing and distribution.

E. Fullerton Cook, *Chairman*,
U.S.P. Committee of Revision.

P.S.: Please note that requests for the Interim Revision Announcement No. 3 should be accompanied by ten cents. Earlier announcements were sent free but the cost has become prohibitive.

RECENT DEATHS

COUPAL — James Francis Coupal, M.D., White House physician during the Coolidge Administration, died at Walter Reed Hospital on January 3 after a week's illness. Colonel Coupal was born in Quincy, Mass., January 26, 1884, received his early education in the schools of Beverly and Everett and was graduated from Tufts College in 1906 and from Tufts College Medical School in 1909. He served at the Boston City, Cambridge Relief, and St. Elizabeth's Hospitals, beginning practice in Boston in 1910. He began his military career as a captain and assistant surgeon with the 8th Massachusetts regiment, seeing service on the Mexican border. He went overseas with the 26th division, was promoted to major and after the war was head curator of the Army Medical Museum in Washington.

Dr. Coupal left the army in 1929 to engage in private practice in Washington. He was a member of the American Medical Association, the Massachusetts Medical Society, the American Association of Pathologists and Bacteriologists, and author of the Gas Gangrene Chapter of the United States Medical History of the World War.

He is survived by his widow, his mother, and a sister, Mrs. Josephine Murphy, of Wakefield.

STORER — Malcolm Storer, M.D., died on January 2 at his home, 380 Beacon Street, Boston, at the age of 77 years. Dr. Storer was born in Milton, Mass., the son of Horatio Robinson and Emily E. (Gilmore) Storer. He was educated in private schools in Germany, Italy, England and Newport, R. I., subsequently being graduated from Harvard College in the class of 1885 and from the Harvard Medical School in 1889. He began practice in Boston in 1901 and became a gynecologist at the Boston Dispensary, and instructor in gynecology at Harvard Medical School.

Always interested in and an authority on numismatics, Dr. Storer was curator of coins and medals of Harvard University and the Massachusetts Historical Society, had charge of medical medals at the Boston Medical Library, and was honorary keeper of coins at the Boston Museum of Fine Arts. He was a former Councilor of the Massachusetts Historical Society, and had been both president and secretary of the Boston Numismatist Society. He is survived by his widow, a daughter, Mrs. Egerton B. Sawtelle, of Augusta, Maine; two brothers and a sister.

JENNINGS—Curtis Herman Jennings, M.D., died at his home in Fitchburg on December 31, 1934, after a long illness. He was fifty-eight years old. A native of Brookfield, he was graduated from the Springfield High School, and from the Baltimore University School of Medicine in 1902. At the time of his death Dr. Jennings was visiting radiologist to the Burbank Hospital in Fitchburg, the Leominster Hospital, the Elliot Community Hospital in Keene, N. H.; the Peterborough, N. H., Hospital, and the Gardner and Ayer Hospitals. He served as a seaman in the Spanish War and as a naval officer in the World War. He is survived by his widow, a son and two daughters.

OBITUARY

RESOLUTIONS ON THE DEATH OF PROFESSOR FOLIN

We, members of the Faculty of Medicine of Harvard University, in meeting assembled, do herewith record our sorrow at the death of our colleague, Otto Folin, Hamilton Kuhn Professor of Biological Chemistry.

Since 1907 Professor Folin had been a member of this Faculty, sharing in its deliberations and contributing to its discussions with the wisdom of a well-trained mind. Quietly, forcibly, with clarity of expression and a touch of humor, was it his custom to share with us his opinions on matters under consideration by this Faculty; his words always carried weight; we valued his counsels; we knew the unselfishness of the man who spoke and the inherent modesty of one who never sought self-aggrandizement.

Professor Folin, himself a recognized authority in his chosen field of biochemical investigation, was the ideal leader of an important department in this Medical School. Here he taught to class after class of medical students the facts and methods of a science that is of great importance to medicine and to them he gave the example of accuracy in methods of obtaining data to be used in the study and care of patients. To him came graduate pupils to be trained in investigation that they, in turn, might become teachers of students and seekers after greater knowledge of the chemical relationships of health and disease in man and animals. His pupils spread widely his influence into many laboratories for the betterment of mankind.

We, his colleagues, pay tribute to the quality of the man and the significant importance of his contributions to biochemistry, particularly the development and application of methods of microanalysis of body fluids and tissues. We recognize his leadership. We revere the memory of our colleague. Long will his influence be felt in the Harvard Medical School.

What the Medical School is to-day is a mosaic of the lives of those who in the years since its founding have been of it; all of the brilliantly colored bits that make up this picture are attributes of the work and character of the men who have been members of its Faculty. Professor Folin had added gold and purple to the mosaic that we cherish.

To Professor Folin's wife and children we tender our deep-felt sympathy in their sadness and sorrow.

NOTICES

CLINIC AT THE PETER BENT BRIGHAM HOSPITAL

At 3:30 P.M. on Thursday, January 17, in the Amphitheatre of the Peter Bent Brigham Hospital Dr. Henry A. Christian, Physician-in-Chief, Hersey Professor of the Theory and Practice of Physic in the Harvard Medical School, will give a medical clinic. To it are cordially invited practitioners and medical students. These clinics will be repeated on Thursdays, until May.

On Saturdays in the wards of the Peter Bent Brigham Hospital, from 10 to 12, staff rounds will be conducted by Dr. Christian. These are open to all physicians.

REMOVALS

JOHN B. HAWES, 2ND, M.D., and MOSES J. STONE, M.D., announce the removal of their offices to 330 Dartmouth Street, Boston.

GEORGE SCHWARTZ, M.D., announces the removal of his office to 311 Commonwealth Avenue, Boston.

DAVID B. STEARNS, M.D., announces the removal of his office to 485 Commonwealth Avenue, Boston.

ERRATUM

In the article "Rheumatic Heart Disease in Early Childhood" by James Alexander Lyon, M.D., issue of December 27, 1934, page 1192, first column, thirteenth line, the word "theocalcin" was misspelled. The sentence should have read:

In these instances theocalcin and the salicylates are the drugs of selection.

NOTICES OF MEETINGS

SURGEONS TO MEET IN JACKSONVILLE, FLORIDA

The Southeastern Surgical Congress, through its secretary, Dr. B. T. Beasley, announces that the sixth annual assembly of the Congress will be held in Jacksonville, Florida, March 11, 12 and 13, 1935. The Congress has met previously in Atlanta, Birmingham and Nashville.

The states composing the Congress are Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and Virginia. A record attendance is anticipated at the Jacksonville meeting. Since March is the most desirable month to visit the land of flowers, many surgeons will no doubt combine business and pleasure and attend this season of the year.

Some of the most distinguished surgeons in the country representing the different surgical specialties have been invited to appear on the program. A partial list of those who have already accepted places is as follows: Drs. Walter C. Alvarez, Perry Bromberg, Hugh Cabot, Willis C. Campbell, George W. Crile, John F. Erdmann, Paul Flothow, Ralph Green, Arthur Hertzler, C. Jeff Miller, Alton Ochsner, J. C. Patterson, J. Knox Simpson, J. W. Snyder and W. A. Weldon. More than twenty others will be listed when the program is completed. Look for the completed program which will be mailed about February 15, 1935.

For information address Dr. B. T. Beasley, Secretary-Treasurer, 1019 Doctors Building, Atlanta, Ga.

ESSEX NORTH DISTRICT MEDICAL SOCIETY

The Essex North District Medical Society will hold its ninety-fourth semi-annual meeting on Wednesday, January 16, at Shawsheen Manor. Shawsheen Manor is at the junction of routes 133 and 28. The telephone number is Andover 860.

Dinner will be at 12:30 P.M., and will be followed

by the business meeting, at which Douglass V. Brown of the Harvard School of Public Health will talk on British Health Insurance.

NEW ENGLAND OPHTHALMOLOGICAL SOCIETY

The next meeting of the New England Ophthalmological Society will be held on Tuesday, January 15, 1935, at the Massachusetts Eye and Ear Infirmary, 243 Charles Street, Boston.

PROGRAM

9:00 A.M. Clinic and operating room.

11:30 A.M. Neuro-ophthalmological Conference.

4:00 P.M. Presentation of Muscle Cases. These will be discussed by Professor Bielschowsky.

Evening Program
8:00 P.M.

Annual meeting. Election of Officers.

Papers:

1. Studies of Blood Fat in Two Cases of Lipaemia Retinalis. Dr. Alexander Marble.
2. Congenital and Acquired Anomalies in Fusion. Professor A. Bielschowsky.

BENJAMIN SACHS, M.D., *Secretary.*

NEW ENGLAND PHYSICAL THERAPY SOCIETY

The second lecture on Medical Electricity by Dr. L. L. Campbell will be presented at the meeting of the New England Physical Therapy Society, 82 East Concord Street, Boston, on January 16, 1935, at 8 P.M.

Physicians and medical students are invited to attend.

ARTHUR H. RING, M.D., *Secretary.*

Arlington.

MASSACHUSETTS GENERAL HOSPITAL

CLINICAL MEETING—THURSDAY, JANUARY 17, 1935
Moseley Memorial Building
8:15-10:00 P.M.

PROGRAM

1. Asthma in Children—Edward S. O'Keefe, M.D.
2. Eczema—B. Thurber Guild, M.D.
3. Skin Tests—Abraham Colmes, M.D.
4. Common Allergens—F. M. Rackemann, M.D.

Committee on Hospital Meetings,
ARTHUR W. ALLEN, *Chairman,*
WILLIAM B. BREED, *Secretary.*

HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be held in the Peter Bent Brigham Hospital Amphitheatre (Van Dyke Street entrance) Tuesday evening, January 22, at 8:15 P.M.

PROGRAM

Presentation of Cases.

Gastroscopy and Optic Esophagoscopy, by Dr. J. Schloss, New England Medical Center.

X-Ray Findings in Finer Lesions of the Stomach and Their Relationship to Gastroscopy, by Dr. Richard Schatzki, Massachusetts General Hospital.

MARSHALL N. FULTON, M.D., *Secretary.*

MASSACHUSETTS MEMORIAL HOSPITALS

There will be a meeting of the Surgical Section in the Ladies' Aid Room (former nurses' dining room), Talbot Memorial, 82 East Concord Street, on Friday, January 11, 1935, at 12 noon.

Dr. Milo C. Green will present a case of Buerger's Disease.

Dr. Ensio K. F. Ronka will read a paper on Primary Carcinoma of the Liver with presentation of two cases.

Dr. Charles F. Branch, the Pathologist, will discuss the above papers.

MILO C. GREEN, *Secretary.*

CLOVER HILL HOSPITAL

The next medical meeting of the Clover Hill Hospital will be held in the reception room of the hospital at 161 Berkeley Street, Lawrence, on Thursday evening, January 17, at 8:30 P.M.

The speaker of the evening will be Frederick L. Good, M.D., of Boston, Professor of Clinical Obstetrics at Tufts College Medical School.

His subject will be: "Maternal Mortality! What Can We Do to Lower It?"

The lecture will be illustrated with lantern slides. Discussion will follow. All physicians of Lawrence and vicinity are cordially invited to attend.

N. F. DECESARE, M.D., *Chairman.*

PLYMOUTH DISTRICT MEDICAL SOCIETY

The next meeting of the Plymouth District Medical Society will be held at the Goddard Hospital, Brockton, January 17, at 6:00 P.M.

PROGRAM

"Present Status of Medical Economics" by Dr. Reginald Fitz, Boston.

Dr. William H. Robey, President of the Massachusetts Medical Society, will also speak.

Dinner will be served at the hospital.

GEORGE A. MOORE, M.D., *Secretary.*

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING MONDAY, JANUARY 14, 1935

Monday, January 14—

*8:30 A.M. Dr. Christian. Lecture and clinic on Heart Disease. Peter Bent Brigham Hospital.

Tuesday, January 15—

All day session, New England Ophthalmological Society. See notice elsewhere on this page.

*12 M. South End Medical Club. 554 Columbus Avenue, Boston.

Wednesday, January 16—

†2:30-4 P.M. Ward Visit (Pediatrics), Massachusetts Eye and Ear Infirmary.

†4-5 P.M. Seminar Pediatrics, Massachusetts General Hospital, Pediatric Laboratory.

*8 P.M. New England Physical Therapy Society at 82 East Concord Street, Boston.

Thursday, January 17—

*12 M. Clinico-Pathological Conference. Massachusetts General Hospital.

†12 M. Clinico-Pathological Conference. Children's Hospital.

*3:30 P.M. Medical Clinic. Dr. Christian, Peter Bent Brigham Hospital.

†4:30 P.M. Surgical Clinic. Children's Hospital Amphitheatre.

8:15-10 P.M. Clinical Meeting, Massachusetts General Hospital. Moseley Memorial Building.

Friday, January 18—

†12 M. Clinical Meeting of Children's Medical Staff, Massachusetts General Hospital Ether Dome.

Saturday, January 19—

*10-12. Medical Staff Rounds. Dr. Christian, Peter Bent Brigham Hospital.

*Open to the medical profession.
†Open to Fellows of the Massachusetts Medical Society.

January 11—William Harvey Society will meet in the Auditorium of the Beth Israel Hospital at 8 P.M.

January 11—Massachusetts Memorial Hospitals. See page 84.

January 14 - February 25—Lectures and Clinics on Heart Disease by Dr. Christian. See page 35, issue of January 3.

January 15—South End Medical Club will meet at the Headquarters of the Boston Tuberculosis Association, 554 Columbus Avenue, Boston, at 12 noon.

January 15—New England Ophthalmological Society. See page 84.

January 16—New England Physical Therapy Society. See page 84.

January 17—Clinical Meeting, Massachusetts General Hospital. See page 84.

January 17—Clinic at the Peter Bent Brigham Hospital. See page 83.

January 17—Clover Hill Hospital. See page 84.

January 22—Harvard Medical Society. See page 84.

MASSACHUSETTS DIETETIC ASSOCIATION

February 12—Tuesday, 8 P.M. "Diabetic Children," Dr. Priscilla White, Joslin Diabetic Unit.

March 12—Tuesday, 8 P.M. "The Effect of Diet on Anemia," Dr. Lewis Diamond, Instructor in Medicine, Harvard University Medical School, Associate Physician, Children's Hospital.

March 19—Tuesday, 2 P.M. Field Trip: Visit Storehouse, First National Stores.

April 9—Tuesday, 8 P.M. "Small Hospital Problems," Miss Margaret Copeland, Superintendent, Free Hospital for Women.

March 11, 12, 13—Surgeons to meet in Jacksonville, Florida (Southeastern Surgical Congress). See page 83.

April 29 - May 3, 1935—The American College of Physicians will meet at Philadelphia. For information address Mr. E. R. Loveland, Executive Secretary, 133-135 South 36th Street, Philadelphia, Pa.

June, 1935—Medical Library Association will meet in Rochester, N. Y. For details address the Secretary: Miss Frances N. A. Whitman, Librarian, Harvard University Schools of Medicine and Public Health, Boston, Mass.

DISTRICT MEDICAL SOCIETIES

ESSEX NORTH DISTRICT MEDICAL SOCIETY

January 16—See page 83.

The Annual Meeting will be held in May. Time, place and subject to be announced.

E. S. BAGNALL, M.D., Secretary.

FRANKLIN DISTRICT MEDICAL SOCIETY

Meetings will be held on the second Tuesday of March and May at the Weldon Hotel, Greenfield, Mass.

CHARLES MOLINE, M.D., Secretary.
Sunderland.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

March 13, 1935—Wakefield.
May 8, 1935—Winchester.

K. L. MACLACHLAN, M.D., Secretary.
1 Bellevue Street, Melrose.

PLYMOUTH DISTRICT MEDICAL SOCIETY

January 17—See page 84.
March—Plymouth County Hospital.
April—Lakeville Sanatorium.

SUFFOLK DISTRICT MEDICAL SOCIETY

January 23, 1935—General Meeting in association with the Boston Medical Library. Speaker and subject to be announced later.

March 27, 1935—Clinical Meeting at the Boston Lying-In Hospital.

April 24, 1935—Clinical Meeting at the Children's Hospital.

The medical profession is cordially invited to attend all of these meetings.

ROBERT L. DeNORMANDIE, M.D., President.
GEORGE P. REYNOLDS, M.D., Secretary.
HENRY T. HUTCHINS, M.D., Boston Medical Library.

WORCESTER DISTRICT MEDICAL SOCIETY

February 13, 1935—Wednesday evening. Worcester State Hospital, Worcester, Mass. 6:30 P.M.: Dinner. 7:30 P.M.: Scientific program and business session. Announcement of subjects and speakers to be presented at a later date. Dinner complimentary by the Hospital.

March 13, 1935—Wednesday evening. The Memorial Hospital, Worcester, Mass. 6:30 P.M.: Buffet supper. 7:30 P.M.: Scientific program and business session. Announcement of subjects and speakers to be presented at a later date. Buffet supper complimentary by the Hospital.

April 10, 1935—Wednesday evening. Worcester Hahnemann Hospital, Worcester, Mass. 6:30 P.M.: Dinner. 7:30 P.M.: Scientific program and business session. Announcement of subjects and speakers to be presented at a later date. Dinner complimentary by the Hospital.

May 8, 1935—Wednesday afternoon and evening. Annual Meeting of the Worcester District Medical Society. The time and place of this meeting will be announced later.

ERWIN C. MILLER, M.D., Secretary.
27 Elm Street, Worcester.

BOOKS RECEIVED FOR REVIEW

Prolapsus du Rectum. Carrasco. 196 pp. Paris: Masson et Cie. 35 fr.

The Surgical Clinics of North America. October, 1934. Volume 14—Number 5. Lahey Clinic Number. 260 pp. Philadelphia: W. B. Saunders Company. $12.00 per year.

Marriage Hygiene. Vol. 1, No. 1, August, 1934. 111 pp. Bombay: The Times of India Press.

Handedness, Right and Left. Ira S. Wile. 439 pp. Boston: Lothrop, Lee and Shepard Company. $2.75.

Periodic Fertility and Sterility in Woman. A Natural Method of Birth Control. Professor Hermann Knaus. 162 pp. Vienna: Wilhelm Maudrich. $6.00.

The Autonomic Diseases of the Rheumatic Syndrome. T. M. Rivers. 299 pp. Philadelphia: Dorrance & Company, Inc. $3.00.

The 1934 Year Book of Radiology. Diagnosis edited by Charles A. Waters. Therapeutics edited by Ira I. Kaplan. 512 pp. Chicago: The Year Book Publishers, Inc. $4.50.

Treatment by Diet. Clifford J. Barborka. 615 pp. Philadelphia: J. B. Lippincott Company. $5.00.

International Clinics. Edited by Louis Hamman. Volume IV. Forty-Fourth Series, 1934. 326 pp. Philadelphia: J. B. Lippincott Company.

Studies from The Rockefeller Institute for Medical Research. Reprints. Volume 90. 649 pp. New York: The Rockefeller Institute for Medical Research, 1934.

What About Sterilization? Rev. Ignatius W. Cox, and James J. Walsh. A series of eight articles discussing the question from the moral and scientific points of view. 31 pp. Washington, D. C.: National Catholic Welfare Conference. $.15.

BOOK REVIEWS

Constructive Eugenics and Rational Marriage. By Morris Siegel, M.D. 196 pp. Toronto: McClelland & Stewart, Ltd. $2.50.

This book aims to present to the intelligent reader some facts about a little-understood subject. It is not a textbook but gives a more or less popular discussion of eugenics together with the author's personal views on a constructive program. It would be disappointing to anyone searching for an exhaustive treatise but it does give an accurate and reasonably comprehensive account suitable for the general public. It has one virtue in not containing the exaggerated or unproved statements so often found in similar popular works. The main criticism is that the meat of the book could have been given in a much more concentrated form without the slightest injury to purpose or subject matter.

Physical Diagnosis. By Richard C. Cabot. Eleventh Edition. 540 pp. Baltimore: William Wood & Company. $5.00.

This is the eleventh edition of a book which has already been accepted as a standard text on Physical Diagnosis, so the reviewer sought to verify the prefacial promises, rather than to reread material primarily intended for second-year medical students. There is a newly-written chapter on the electrocardiogram which tends to overemphasize its clinical value, but otherwise there seem to be no significant additions. The preface is a little exaggerated because it leads one to anticipate more than he actually finds when he gets inside; for example: "*Pneumoconiosis* is more adequately treated than in former editions, and the more recent knowledge of *Pulmonary Embolism* has been incorporated." Well—*Pneumoconiosis* gets eleven lines and a picture, with no mention of silica, and *Pulmonary Embolism* gets ten lines. While this is all part of the edition, one wonders if the successive editions of such a book could not be simplified. The reviewer confesses his preference for a less elaborate treatise on Physical Diagnosis, and would rather see the second-year men learn to study a briefer exposition, such as that published by Buck during the current year. This is not to be construed as a critical comparison of two books on the same subject. Only one typographical error was seen, the book is well written, very well illustrated, and well printed and bound.

An Activity Analysis of Nursing. By Ethel Johns and Blanche Pfefferkorn. Prepared under the Auspices of the Committee on the Grading of Nursing Schools. 214 pp. New York: The Nursing Information Bureau of the American Nurses' Schools. $2.00.

This publication is the result of a job analysis of nursing by two very competent nurses, Miss Ethel Johns, now Editor of "The Canadian Nurse," and Miss Blanche Pfefferkorn, Director of Studies of the National League of Nursing Education, under the auspices of the Grading Committee. The work of the authors was carried through under the direction and counsel of Prof. W. W. Chatters, Professor of Education and Director of the Bureau of Educational Research of Ohio State University, Professor Elizabeth C. Burgess, Associate Professor of Nursing Education, Teachers' College, Columbia University, and Miss Tucker, General Director of the National Organization of Public Health Nursing.

We believe that all interested in nursing school curricula will find this invaluable for reference purposes. We do not know of the existence of so complete and helpful a job analysis in nursing.

The Compleat Pediatrician. Practical, Diagnostic, Therapeutic and Preventive Pediatrics. For the Use of Medical Students, Internes, General Practitioners and Pediatricians. By Wilburt C. Davison, M.A., D.Sc., M.D., Professor of Pediatrics, Duke University School of Medicine, and Pediatrician, Duke Hospital, Durham, N. C. Printed by Seeman Printery for Duke University Press, 1934. $3.75.

This little book, its title page styled after Izaak Walton's "The Compleat Angler," is, as the author says in his preface, "an effort to compile and record briefly those practical pediatric facts, which though essential, usually slip from memory; it is an attempt to combine in one volume, the information usually found in several, which should be consulted for more complete study."

It is, in fact, a ready reference book with sections devoted to Symptoms and Signs. Diseases, with the eight important features of each listed—Definition, Preventive measures, Incidence, Symptoms and Signs (recapitulated from Chapter I), Differential Diagnosis, Laboratory Tests, Treatment and Prognosis. It is brief, yet encyclopedic in scope; nothing of importance seems to be omitted. "At first glance this book, with its numerous cross-reference numbers, resembles a telephone book, and in fact it may serve much the same purpose, i.e., an indexed list of names and other information."